

Educational documentation and information

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Thematic bibliographies published in
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- 174. Access of women to education
- 175/176. Special education
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their chance of success at school
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Bulletin of the International Bureau of Education

Technical and vocational education

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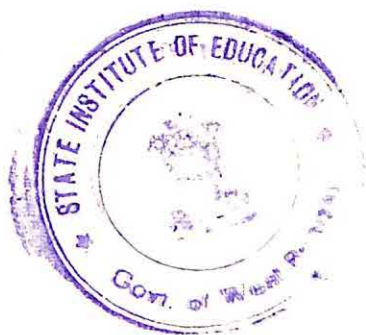
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P R E F A C E



The need—economic, occupational and individual—for more and better vocational education and for parity of esteem between the latter and general education has long been recognized. The purpose of the select bibliography on technical and vocational education and training which constitutes the greater part of this Bulletin is not to draw attention yet again to this need but to document the specialist and policy-maker wishing to find out how and how far the need is being met.

Apart from the intrinsic interest of the subject, this bibliography has been planned by the IBE to serve as supporting material for the 34th International Conference on Education. The Conference will meet in Geneva in September 1973, and will address itself to the special topic of 'The relationships between education, training and employment, with particular reference to secondary education, its aims, structure and content'. Inevitably, the Conference will focus attention on the state of technical and vocational education, in order to study recent developments which bridge the gap between schooling and working life.

For the compilation of the bibliography, the IBE staff turned to Mr. Hugh Warren, OBE, until recently principal of the South-East London Technical College. The Secretariat wishes to express here its gratitude to Mr. Warren for his methodical work. The author brought his wide experience of the field in Great Britain and elsewhere to bear on the collection and annotation of material. He also received contributions from a number of Unesco National Commissions and from the International Labour Organisation. It must be borne in mind, however, that the final product is the work of one specialist, not a circular questionnaire, so that the approach is rather in depth than in breadth.

The 'Sources and resources' section of this issue includes an article on the development of the network of educational documentation centres in Arab countries, followed by a list of these centres, with addresses. A corresponding account and list for Latin America appeared in no. 183 of *Educational documentation and information*.

T A B L E
O F C O N T E N T S

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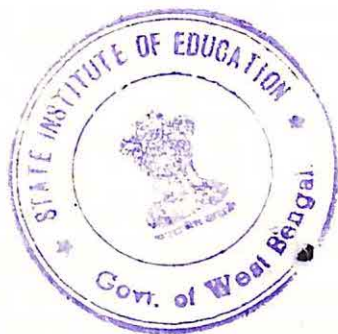
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SOURCES AND RESOURCES



Development of educational documentation and information in the Arab countries

For some twenty years, the Arab States, like many other countries, have felt the need to reform, adapt and develop their educational structures, thereby making not only necessary but even indispensable the work of the documentation centres which seek, gather, process, produce and disseminate educational information.

As far back as 1956, Egypt, with assistance from Unesco, set up an educational documentation centre within the Ministry of Education mainly to serve the country's education authorities. Subsequently, other Arab States—Algeria, Jordan, Saudi Arabia and Sudan—requested and obtained from Unesco technical assistance in the form of experts, bibliographical material, equipment and grants enabling them to set up or develop their national centres.

It became clear, however, that the Arab States' needs in the field of educational documentation and information were increasing daily and that the development of each country's basic structures in this field was not keeping pace with these needs. It seemed essential to co-ordinate better the efforts scattered over the region, and the Cairo Centre, which had meanwhile given a considerable impetus to these activities, was called upon to play an increasingly important part in developing educational information in the Arab countries. In 1966, the General Conference of Unesco allocated funds to enable the Centre to establish a regional programme; these funds were renewed in 1968 and 1970.

Once the details of this programme were established, the Cairo Centre and Unesco decided to emphasize the training of specialist staff without whom the progress and even the survival of these newly created educational documentation centres' services would be jeopardized.

In 1968, two courses of intensive training for specialist documentalists were organized in Cairo with the co-operation of Unesco. The courses, each lasting three months, consisted of lessons on theory and practical work carried out at the Centre. The Arab countries were invited to present candidates who, to be selected, were to fulfil certain conditions; they should be working or be expecting to work in documentation centres, and should have had training in librarianship or education.

Further courses were held in 1969/70 and 1972, the latter attended by 27 persons from 11 Arab countries and regional organizations such as UNRWA and the Arab League.

From the outset this programme of training aroused the interest of the Arab League, which contributed by making grants available to the Arab States to enable them to send participants to the courses. Other countries met their own nationals' expenses.

Another aspect of this regional programme is the dissemination of information. Educational works are translated into Arabic and distributed throughout the region: periodical publications for other Arab countries have also been issued, among which mention may be made of: an index of articles in educational journals published in the Arab countries; abstracts of Arab and foreign educational literature; an information bulletin.

The Cairo Centre maintains a card index of works acquired by the various centres and recently requested the Amman Centre to translate section 37 (education) of the Universal Decimal Classification. A copy of the translation was sent to each of the Arab countries for comment and suggestions; it will then be printed in its final form. Another co-operative effort of this kind will make it possible to produce a thesaurus of educational terms in Arabic which will, in due course, facilitate the use of the computer for bibliographical searches. The importance of these two initiatives in the field of terminology for the development of regional co-operation cannot be over-estimated.

The Cairo Centre has participated since its inception in the Co-operative Educational Abstracting Service set up by Unesco: IBE. The Centre now translates and publishes in Arabic any abstracts of special interest for the region. The educational documentation centres of Algeria, Jordan, Sudan and Tunisia were recently invited to take part in the Co-operative Educational Abstracting Service.

Finally, from a broader point of view, mention should be made of the importance which the Arab League attaches to matters relating to educational documentation. This regional, intergovernmental organization organized at its headquarters from 13 to 18 September 1969 a seminar on educational documentation which was attended by representatives from nearly all the Arab States, from regional organizations and from Unesco. The following subjects were discussed: different types of documentary material; organization and administration of documentation centres; training of documentalists; international co-operation in the field of educational documentation; union list for the Arab world; production and exchange of publications; documentary techniques, with particular reference to indexing and information retrieval.

LIST OF NATIONAL EDUCATIONAL DOCUMENTATION
AND INFORMATION CENTRES IN THE ARAB WORLD

<i>Algeria</i>	Institut Pédagogique National, Bureau de l'Information, de la Documentation et des Publications, 11, rue Ali Haddad, Algiers.
<i>Bahrain</i>	Department of Education, Educational Planning Unit, Documentation Section, P.O. Box 43, Manama.
<i>Egypt</i>	Documentation Centre for Education, 33, Falaki Street, Cairo.
<i>Iraq</i>	General Department of Documentation and Studies, Ministry of Education, El-Hariry Street, Baghdad.

<i>Jordan</i>	Educational Documentation and Publications Division, Ministry of Education, Amman.
<i>Kuwait</i>	Documentation Section, Ministry of Education, Kuwait.
<i>Libya</i>	Educational Documentation Centre, Ministry of Education and National Guidance, 82, First of September Street, Tripoli.
<i>Saudi Arabia</i>	Ministry of Education, Documentation Centre for Education, Riyadh.
<i>Somalia</i>	Documentation Centre, Ministry of Education, Mogadiscio.
<i>Sudan</i>	Educational Documentation Centre, Ministry of Education, P.O. Box 2490, Khartoum.
<i>Syria</i>	Centre de Documentation Pédagogique, Ministère de l'Éducation, Damas.
<i>Tunisia</i>	Institut des sciences de l'éducation, Bibliothèque, 17, rue Fénelon, Tunis.

Two Unesco regional centres possess libraries on education which supply information in their respective field of specialization:

Centre for functional literacy in the Arab States,
(ASFEC),
Siro-el-Layyan,
Menoufia,
Arab Republic of Egypt.

Arab States Centre for Educational Planning and Administration,
B.P. 5244,
Beyrouth,
Lebanon.

Selection of reference works

Commonwealth universities yearbook: a directory to the universities of the Commonwealth and the handbook of their Association. 1972. 49th ed. London, Association of Commonwealth Universities, 1972. 2,113 p., bibl.

Yearbook for 1972 of universities of the British Commonwealth, published by the Association of Commonwealth Universities, which aims to promote contact and co-operation between its members and in particular to facilitate the international movement of teachers, students and research workers. This important publication contains detailed information concerning the universities in the British Commonwealth. The Pakistan section had already been set up when that country withdrew from the Commonwealth and Bangladesh joined. It was retained, however, with a few suitable changes, under the heading 'Pakistan and Bangladesh'. Information on over 200 universities comprises: principal officers, teaching staff, administrative and other staff, constituent, affiliated or associated institutions, general information (history of the establishment, location, constitution, institutes and laboratories, courses leading to first or higher degrees, tuition fees, various associations, etc.), events during the year 1970. In the case of countries with more than four or five universities, 'national introductions' written by leading academic personalities place the subject of universities in a national context. This edition includes a new article on Australia together with brief notes about two new universities, although they have not yet admitted their first students. In addition, several appendices provide information on the universities in the Republic of Ireland and in South Africa (former members of the Commonwealth), on requirements for admission to first degree courses at universities in Australia, Britain, Canada, India, New Zealand, Nigeria, Pakistan and Bangladesh; there are also statistics on foreign students attending British universities, a bibliography, descriptions of the Commonwealth scholarship and fellowship plan and of the Association of Commonwealth Universities, as well as various indexes. This year's edition includes eight chapters on new universities.

Council of Europe. Council for Cultural Co-operation. Documentation Centre for Education in Europe. *Educational research: European survey, 1970*. Strasbourg, 1971-1972. 5v.

Following up the first survey, carried out in 1968, this comprehensive survey of educational research in Europe provides detailed yet concise information on the educational

research policy of Member Governments of the Council for Cultural Co-operation, on the main educational research organizations and on the major educational research projects reported or in progress. Replies from 14 countries to a questionnaire drawn up by the ad hoc Committee for Educational Research show a considerable increase in the number of educational research projects and research organizations in some Member States. A new section included in the 1970 questionnaire asked for information on educational research projects carried out by research organizations other than those primarily concerned with educational research. For each country there is a brief article on educational research policy, and data on over 240 research institutes include history, status and programme, details of staff and budget. The fifth volume is an index of institute directors and researchers followed by lists of key-words in English and French relating to the projects described.

Dülfer, E. *Training facilities for cooperative personnel in African countries*. Rome, Food and Agricultural Organization of the United Nations, 1971. 158 p., figs. [Also published in French]

The FAO's programme of activities includes the task of encouraging the development of co-operatives and since almost every aspect of this development requires improved standards of education and better technical and vocational training, considerable emphasis is placed on the promotion of co-operative education and training. The introductory article to the present directory, on co-operation and co-operative training in Africa, outlines the different types of co-operatives, their problems, and the structure and methods of training programmes. Complete data on training institutions were received from 22 countries with a further 12 countries submitting less detailed information. In each report, geographical and population data are followed by a brief note on the importance of co-operatives and a description of the schools or programmes concerned. Since, in many countries, some of the personnel had also been trained at institutions abroad, these institutions are discussed in the final section.

Faure, E. et al. *Learning to be: the world of education today and tomorrow*. Paris, Unesco; London, Harrap, 1972. 313 p., figs. [Also published in French]

A set of critical reflexions rather than an exhaustive study, the Report of the International Commission on the Development of Education, published in 1972 under the title *Learning to be*, set out to produce an over-all diagnosis of education throughout the world, highlighting the major problems raised by the development of education, and sketching the broad outline of possible solutions to these problems. The members of the International Commission on the Development of Education, drawn from such widely differing horizons as Chile, Syria, the People's Republic of the Congo, the USSR, Iran and the United States, under the chairmanship of Mr. Edgar Faure, former Prime Minister and Minister of Education, immediately approached education at the level of the international community, disregarding regional or national peculiarities. Considering 'not only education that is accessible to all, but education whose aims and methods have been thought out afresh' as the key to true democracy, they worked on the basic assumption that 'the aim of development is the complete fulfilment of man' and that 'only an over-all, lifelong education can produce' such a man.

Based on this ideological and methodological framework, the report is presented in three balanced parts entitled respectively 'Findings', 'Futures', and 'Towards a learning society'. Although the data and the opinions expressed correspond to the general ideas and feelings which have surrounded educational problems for some years now, the demanding reader, even if he is struck by the brutality of certain realities, such as the ever-widening gap between developed and developing countries or the sometimes dramatic failures of education as an enterprise in some countries, is none the less left either unsatisfied by the lapidary nature of some analyses (first part of the report), or else bemused and sceptical by the utopian aspect of the prospects offered (third part of the report). Nevertheless, the last chapter, entitled 'Roads to solidarity' lays down for

the first time—and in clear terms—the basic principles which must govern international co-operation in the field of education, and at the same time it outlines the general framework as well as the ways and means for a radical renewal of the goals, methods and content of education. It is significant in this respect that the report ends with a concrete proposal, instituting an International Programme for Educational Innovation.

Unesco. Regional Office for Education in Africa. Population, language, education: selected statistical data on 35 countries of sub-Saharan Africa/Population, langues, éducation: recueil de données statistiques sur 35 pays d'Afrique au sud du Sahara. Dakar, 1972. (unpaged) figs., illus.

This collection of statistical data from 35 African countries is intended to provide some of the data required for the formulation of tentative models regarding the use of satellites for information, education and development in the region. It is hoped that it will also serve the purposes of courses in educational planning and administration, project identification or evaluation missions, country programming exercises, seminars and surveys, such as those organized by Unesco's Regional Office in Dakar. Sources for this information were almost all found in Dakar. Country texts are in English or French according to the language used by the administration concerned. The school statistics reproduced in this issue (October 1971) refer to the school year 1970/71 for 13 countries, 1969/70 for 15 countries and 1968/69 for 7 countries only. Following the country files are tables on population and education by zone, according to the three categories: same sub-regional geographic area, common languages used at school, and comparable school systems. Finally, a regional section sums up the data for all the 35 countries.

U.S. National Center for Educational Communication. Educational Reference Center. *Educational finance: an ERIC bibliography, prepared for the President's Commission on School Finance by the Educational Reference Center, National Center for Educational Communication*. New York, CCM Information Corp., 1972. 438 p.

This comprehensive bibliography covers all ERIC materials relevant to educational finance issues associated with the elementary and secondary school programme in the United States from the beginning of the ERIC system until July 1971. Also included are those documents relating to student enrolment, staff compensation and resource allocations. Besides documents announced in 'Research in education', citations and abstracts were also obtained from 'Selected documents on the disadvantaged' and 'Office of Education research reports, 1956-1965'. Also included are review articles indexed for the 'Current index to journals in education'. The material is arranged in four sections: ERIC documents, ERIC journal articles, subject index, author index.

World survey of education. Vol. V. Educational policy, legislation and administration. Paris, Unesco, 1971. 1,418 p., figs. [Also published in French]

The fifth and final volume in the *World survey of education* series contains over 200 national and territorial studies prepared, for the most part, by the education authorities in the Member States of Unesco. Each national chapter is divided into four main sections. (i) Aims and policy: the policy-making machinery; responsibilities of the State and the community etc.; provision of educational facilities for special groups of children; education in relation to manpower requirements; accepted educational priorities. (ii) The legal basis of the education system, including the process by which laws, rules and regulations are made and enforced, and the distribution of responsibilities between the central, provincial or regional and local authorities or other agencies. (iii) Education administration: administrative structure; finance, building and equipment; operation of the education system (with particular emphasis on the role, status etc., of teachers and supervisory staff); and educational planning, including the quality of education, curricula and textbooks, and research. (iv) Other considerations: this section provides information on any major trends or problems that do not fit into the foregoing pattern.

In addition, each chapter contains a summary table of statistics covering all levels of education and others on the financing of education and expenditure. Most chapters also include two diagrams showing the organization and structures of the national education system and of the structure of administration and control. An extensive introductory section provides a descriptive and interpretative analysis of the general state of education throughout the world and of trends and developments based largely on the mass of details contained in the national contributions. Part of this section is devoted to an international statistical review of education.

The world year book of education, 1971/72. *Higher education in a changing world*. Joint editors: B. Holmes [and] D.G. Scanlon. Published in association with the University of London Institute of Education and Teachers College, Columbia University, New York. London, Evans Brothers, 1971. 410 p., figs., bibl.

This edition examines the traditional concepts of higher education, and the way in which they have been influenced by philosophers, political creeds, newly-won independence, the population explosion, the impact of economic pressures and industrial expansion, and the infusion of ideas from Europe to the other continents. The three main sections covering the place of the university in society in an historical perspective, the role of change in decision-making and policy, and national solutions to educational reform are completed by a bibliography on material published, in most cases, since 1960. Also included is a list of centres for the study of higher education.

TECHNICAL AND VOCATIONAL EDUCATION

INTRODUCTION TO THE SELECT BIBLIOGRAPHY

Any presentation of the world's bibliography on a subject so wide and so rapidly developing as is covered in this Bulletin must of necessity omit many more references than it includes. Approximately 8,000 reviews, abstracts, articles and books were sifted in order to select the 450 included herein. That, however, does not exclude the possibility, even probability, that many interesting and valuable references will have been overlooked. That is solely due to the practical difficulties of search; for however valuable the publication, if it is not adequately reviewed or abstracted in the educational press of the territory concerned, it may well escape notice. For all such omissions I present my apologies in advance.

The references detailed in the ensuing pages have been selected to exemplify the growing points of technical and vocational education, evaluated so far as possible from a world point of view; and it is also the main purpose of this introduction to display those areas of growth and change rather than to describe the present state, or well-known functions, of this branch of education.

The greatest changes in technical education during the past decade have arisen from its integration, by all but a very few countries, into the general national system of education, both at secondary and at higher levels. Less than half a century ago this kind of training was nearly always the responsibility of 'another' ministry—Labour, Commerce, Economics, Defence, Agriculture, etc.—and in some countries (my own included) it could serve also as part of the penal system (the industrial schools)! In modern times the infusion of practical productive work into secondary or even primary schools is regarded both as a pedagogical necessity and as a social factor of the highest importance. Education must be 'relevant'—to use the term current in some of the references—and be seen to accord with the modern world, thus giving the child a sounder appreciation of the demands to be made upon him after school years, and of the social and working conditions of his active years. Many references are therefore devoted to this aspect, which knows no political or geographical limits, and is occurring simultaneously all over the world.

The next most notable aspect of change—arising directly from the one mentioned above—is the assimilation and equivalence of technical qualifications to the long-standing and traditional certificates and diplomas of general education, such for example as *Baccalauréat*, *Abitur*, *Maturità*, in order that the pupil who has chosen a technical or vocational

path of education at the secondary stage may not be debarred, as heretofore, from following through—if his abilities justify it—to higher education, but on the contrary thus be vigorously encouraged to do so. This process of assimilation has been slow and painful, accompanied by much opposition, some of which has merely reflected vested interests and reluctance to face change, and some of which has been more soundly based in reflecting doubts as to the educative function of too narrow a technical course of study, even though such may contribute, through its economic or functional aspects, to the national well-being. As many references will indicate, the two purposes are not necessarily in opposition and a synthesis is readily possible in which both personal and national development is achieved.

This Bulletin, as its title indicates, is not intended to cover or even to encroach upon higher education (except teacher training) but it does so occasionally where this is necessary for a more complete understanding of the secondary field. Unless the technical and vocational phases of secondary education were provided with an outlet into higher education for the best of their students then they must immediately fall in prestige as against those traditional forms which are closely linked to university studies. The most recent changes in the structure of higher education reflect this social necessity, for example the 'comprehensive' forms of higher education now being planned and put into effect in Sweden.

Another area of change—of the greatest significance and importance—is that concerning the recruitment and training of technical and vocational teachers. For if today's pupils are to be inducted, during their last years at school, into the productive and industrial life of their country, then that can only be done successfully by a body of teachers who have themselves spent many years in commercial, industrial or agricultural pursuits. The training of the technical teacher, after recruitment at a young age and straight from school, giving him no more contact with industry than a few desultory 'stages'—which often have the reverse effect to that intended—may have to be reconsidered and replaced by the newer system of recruitment direct from qualified personnel in industry and commerce, followed by short pre-service or in-service courses of pedagogical training. This latter system has been in use by some countries long enough for them to appreciate its worth. It may be that even teachers of general secondary education might in due proportion be recruited in this manner. The references of Chapter V reflect the world's thinking on this aspect of change.

Not only has the structure of technical teacher training been called into question in many countries but the content of this training has of necessity had to be widened to include the whole field of 'educational technology' providing a range of new 'tools for the job'—audio-visual aids, programmed learning, teaching machines, scrambled textbooks, computer-assisted learning, television, radio, tape-recorders, gramophone, etc. Again, new techniques of reproduction permitting quick dissemination of notes and diagrams, and methods of projection on the screen, and so on, have created new possibilities for classroom method. Also new techniques of learning, e.g. case-studies, planned games, simulation systems and even sleep-learning have been more widely adopted, coming into general rather than specialist use. Finally, the techniques of imparting manual skills have been the subject of intensive research, and consequent improvement, more particularly where there are special circumstances, e.g. left-handedness.

Vocational training in industry, and the national systems of apprenticeship, are intended to be outside the scope of this Bulletin but have been touched upon where 'in-school' training is involved, or the vocational school is located in an industrial undertaking. The boundary between the educational world and that of industrial training is an irregular one and is always to be bridged over by close co-operation. Consequently many references are included which relate reorganization of the national apprenticeship system to education and the vocational schools, whether these latter give full-time 'integrated training' or only part-time 'related instruction'. Likewise the development of courses for the up-grading of workers has not been passed over without notice.

This new public awareness that education, technical or otherwise, does not cease with school days, has crystallized into a new doctrine: lifelong education. The practice of this idea is by no means new—it has existed in an only slightly differing form in the Scandinavian countries for nearly a century and is closely paralleled by British 'further educa-

tion' which dates from 1892—but, as so often happens in other developments, there comes a point in time when it is dignified by world assent and interest and a new title. If development follows the history of British further education then a new field, neither secondary nor higher, with its own characteristics and objectives is created—but that remains to be seen.

These are some of the growing points at the present time: but what of the future? Let us accept that 'technical instruction' of 50 years ago—a system apart such as *l'enseignement technique* of France up to 1960—has now become an integral part of the education system in most countries; but we may still ask, and have a duty to ask, is it *education* in the sense of personal enlightenment, an awareness of the human and social qualities required to live without tension in the modern world, and of the ideals that each country has inherited from its past history? As so many of the references indicate, the whole structure of education is now regarded as an integral part of the national system of economic and manpower planning. Graduates of school and college are recorded as manpower 'units', of which the flow and statistical growth are collated and expressed in mathematical 'models', all as a normal routine of the modern planning office. It is very much to the good that education is now accepted as a prime necessity and technical education as an indispensable concomitant to economic growth: but if as professional educators in, and for, the modern world we fail to ensure that our system also gives a valid and stimulating *personal* education, in the fullest sense, then in the long run everything fails, and all the economic planning in the world will not maintain the position. A population of robots, however well trained technically, has little chance of survival, still less of making worthwhile contributions to the world's forward movements, be it in art, philosophy, or science.

One of the key problems of the future, therefore, is to find that synthesis of general and technical education which will ensure that the dual criteria—national economic good and personal individual enlightenment—are both, and equally successfully, satisfied. Failing such a synthesis, or at least serious efforts to create it, then those critics of technical education who maintain that it does not replace all the humanistic values inherent in classical education will continue to command respect in the educational world, and technical education, for all the financial support it may receive, will not improve its poor social rating and low prestige. Very few references, however, touch on this point, and very little research has been done on the character-building properties of technical education and vocational training—yet these are positive and powerful in their effect. At the moment the world, and particularly the developing countries, are concerned with raising the standard of living, for a simple hutment to a homeless family is truly of greater cultural value than the finest work of art. But the older countries which have travelled furthest along the technological road are now coming to realize that, if their difficulties are to be overcome, a great deal more attention must be paid to the quality of living: for in the long run it is national character that overcomes problems, and not solely economic planning or financial aid.

If technical education can now accept such a heavy responsibility, then it will have entered fully into its educational heritage, and be worthy to receive the Torch from those older forms of education that preceded our present times. It is the educational task of the century.

ACKNOWLEDGEMENTS AND THANKS

Whilst as many references as possible were examined and annotated direct from source, the practical difficulties of doing that for all countries of the world and in the original languages will be apparent. Many of the references have therefore been obtained by indirect means, and for this facility thanks are expressed to numerous book reviews, bibliographies, abstracting services, etc., some of which are represented in the first section of Chapter 1 of this Bulletin. In particular the compiler would like to thank, with special indebtedness:

the National Commissions of Unesco who supplied abstracts;
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the BACIE (British Association for Commercial and Industrial Education) Bibliography; the CEAS (Co-operative Educational Abstracting Services) of IBE, Geneva.

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Hugh A. Warren

Bibliography

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I. Bibliographies, sources and general works of reference

BIBLIOGRAPHIES AND SOURCES

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2. Buenos Aires (Provincia). Ministerio de Educación. *Bibliografía argentina de ciencias de la educación*, 1959-. La Plata, Instituto de Bibliografía, 1960-. [Published periodically]

3. Brazil. Centro Brasileiro de Pesquisas Educaçõais. *Bibliografia brasileira de educação*. Published quarterly.

4. British Association for Commercial and Industrial Education (BACIE). *Bibliography of publications in the field of education and training in commerce and industry*. Edited by Perry, P.J.C. Vols 1, 2, and 3 covering March 1960—November 1970. London. Also published quarterly.

5. Centro interamericano de investigacion y documentacion sobre formacion profesional (CINTERFOR). *Catalogo de publicaciones latinoamericanas sobre formacion profesional 1967-68* [Catalogue of Latin American publications on vocational training 1967-68]. Montevideo, Cinterfor. 1969. 170 p.

A selected and annotated bibliography of publications in the work of vocational training for the Latin American region. There is an index of authors and of subjects covering the 718 references comprised in the catalogue.

6. Commission des Communautés Européennes. *Lehrmittel-Dokumentation*/ *Documentation pédagogique*/ *Documentazione pedagogica*/ *Pädagogische documentatie*. Luxembourg.

A quarterly publication containing abstracts on the subject of technical education and vocational training likely to be of interest and helpful to those engaged in such work. Produced in collaboration with the European Institute for Vocational Training. Each abstract is given in German/French/Italian/Dutch/in sequence.

7. Documentation Centre for Education in Europe. *Basic educational bibliographies*, Ed. Director of Education and of Cultural and Scientific Affairs, Council of Europe. Strasbourg.

These have been published from 1966 and now cover 13 countries.

8. Eraut, M., Squires, G. *An annotated select bibliography of educational technology*. London, National Council for Educational Technology. 1971. 90 p.

This work abstracts approximately 1,000 items, both books and articles, written on the subject of educational technology— films, tapes, slides and other training and instructional material.

9. Gondocs, Károly. *Bibliográfia a középfokú ipari szakképzés szakmai követelményrendszerének kidolgozásához* [Bibliography of the system of vocational demands of the industrial schools]. Középfokú Szakoktatás, 4. évf. 1971.

This bibliography includes 214 works from the specialist literature on the subject, both Hungarian and foreign (Soviet, English, Polish, Czechoslovak, German). The chapters comprise: 1. General pedagogy. 2. Technical training, vocational training. 3. Structure, development and technology of mechanical industry. 4. Technical development, and the scientific-technical revolution. 5. Problems of training those qualified. 6. Relations between vocational training and the economy. 7. Psychology and sociology of work.

10. Heywood, J. *Bibliography of British technological education and training*. London, Hutchinson, 1971. 109 p.

11. Horvitz, U.; Ya'akov, H. *Ha-memadim ha-hevratyim shel karyera mikzo'it; bibliografia yisra'elit le-shem hadgamat nossim u-va'ayot hevratyot* [The social criteria for a vocational career; an Israeli bibliography with the emphasis on social topics and problems]. Jerusalem, Hebrew University, School of Education, 1972. 8 p.

12. International Labour Organisation. *CIRF abstracts*. Geneva. CIRF Publications, International Labour Office.

These abstracts, each being a fairly detailed summary of up to 1,000 words or so, give a world coverage of books, articles and legal texts on the subject of vocational training in the widest sense of the term. They also cover the greater part of such published material in the field of secondary technical and higher education in so far as it relates to vocational training. Manpower problems, methods of training, audio-visual and other technical aids to training, and the economics of the subject are also dealt with.

13. Juif, P.; Dovero, F. *Manuel bibliographique des sciences de l'éducation*. Paris, Presses universitaires de France, 1968. 318 p.

Contains some 5,000 references to books and articles, largely on general education but Chapter 7 is on comparative education, and Chapter 9 (6) on technical education.

14. *Lexikon der Pädagogik*. Neue Ausgabe. Hrsg. vom Willmann-Institut, München-Wien. Freiburg, Herder, 1970-1971, 4v. bibl.

This encyclopaedia includes articles covering all aspects of education in relation to educational institutions, school systems, comparative education and innovation. Each volume has an index of keywords and at the end of the fourth volume a general index of 18,000 of such words.

15. Lipsmeier, A. *Ausgewählte Bibliographie zur Berufspädagogik (1.1-31.12.1970)* [Selected bibliography on vocational education] Deutsche Berufs- und Fachschule (Wiesbaden), Bd. 67 Nr. 3, März 1971, p. 224-240.

Selected bibliography of publications on vocational training, in-plant training, retraining,

further training, technical education, teacher training, teaching methods, etc., and including comments on relevant subsidiary legislation in the Federal Republic of Germany.

16. Murray-Smith, S. Technical education in Australia, 1788-1914: a select bibliography. *Melbourne studies in education* (Melbourne), 1967, p. 210-245.

Historical survey tracing the development of technical education in Australia from its British origins. The survey follows the growth of colonial Australia from an agricultural beginning to industrial development, with attention to the differences in settlement and development of each state. Particular emphasis is placed on schools of mining, mechanics institutes and working men's colleges, as it was very largely from these origins that technical education in Australia grew. This is a very useful survey of the literature, as it highlights the sociological aspect of the early history of technical education in Australia.

17. Netherlands. Ministerie van Onderwijs en Wetenschappen. *Pedagogische bibliografie* [Educational bibliography]. 's-Gravenhage, Staatsuitgeverij.

Published at intervals, covers publications on pedagogical, organizational and developmental aspects of education in many countries. There is a section on technical/vocational education.

18. Organisation for Economic Co-operation and Development. *Occupational training: annotated bibliography*. Paris, O.E.C.D., 1970. 102 p.

Selection of useful studies and experiments in this field.

19. *Technical education abstracts*. Liverpool, Information for Education Ltd. School of Education, University of Liverpool.

Published quarterly; each issue contains 120 abstracts culled from over 50 British journals. There is a subject and author index.

20. Unesco-IBE. *Co-operative educational abstracting service* (CEAS). Geneva, International Bureau of Education.

Dating from 1968 and now including abstracts from all regions of the world. An annual output of 200-300 is hoped for. The abstracts so far are largely concerned with general education but technical is not excluded entirely.

21. Unesco. *International guide to educational documentation/Guide internationale de la documentation pédagogique/Guía internacional de la documentación pedagógica*. 2nd. edn. 1960-1965. Paris, 1971. 575 p.

This second edition covers the period 1960-1965 and is presented in the form of annotated bibliographies covering major publications, bibliographies, and national directories, on the subject of education. The guide is in two parts: the first deals with international organizations and with basic works of reference, these being of such a scope as to attract international rather than local interest. The second main part is on a national basis, dealing with countries separately and using one of three languages—English, French, Spanish—for this purpose. The information for all these countries is displayed in standard pattern under headings that correspond to the various aspects of interest: administration, structure of the school system, research, textbooks, etc; and there is an index of countries.

22. University of London. *Catalogue of the Comparative Education Library of the Institute of Education*. Boston, G.K. Hall, 1971. 5v.

An estimated 114,000 cards giving references to periodicals, articles etc., as well as books in this Library. The catalogue is in three sections: author/title; country; subject. It is catalogued by Anglo-American rules and is world-wide in scope.

GENERAL WORKS OF REFERENCE

23. Arasteh, A.R. *Education and social awakening in Iran, 1850-1968*. 2nd. ed. Leiden, E.J. Brill, 1969. XIII, 237 p., figs.

A study of education and social change in Iran during the period from 1850 to 1968—gives historical background, covers primary, secondary, and higher education, vocational training, physical education, improvement of teaching methods, teacher training, the role and social status of teachers, social participation, the role of women, etc.

24. Bargil. *Die berufsbildenden höheren Schulen* [The advanced vocational schools]. Wien, Zentralsparkasse der Gemeinde Wien, 1969.

This work on the advanced vocational schools of Austria comprises three parts: I. general data, access, duration of study, enrolment, costs, scholarships and grants, possibilities; II. (1) the advanced vocational school, career routes, subjects of study, promotion possibilities to higher education; (2) the specialized schools (one only of each type in the country), enrolment, studies, further academic promotion; (3) the advanced commercial school; (4) the advanced housecraft school for girls; (5) the advanced agricultural school; III. finance and funds for scholarships.

25. British Association for Commercial and Industrial Education (BACIE). *A Training officer's guide to the education system in England and Wales*. London, 1967. 22 p. (BACIE Training Manual no. 1)

This guide was prepared with the intention of assisting the training officer in industry to connect with the facilities offered by the education system whether in recruitment of apprentices or in the provision of part-time education. It is concerned with craft apprentices, technicians and student (i.e. graduate) apprentices. The most recent edition has notes also on the Scottish education system.

26. Cantor, L.M.; Roberts, I.F. *Further education in England and Wales*. London, Routledge and Kegan Paul, 1969. 326 p.

This book covers in fair detail the system of further education in the United Kingdom. Not only does it describe the institutions involved—their courses and objectives—but also relationships with vocational training in industry, the coming of the Industrial Training Act 1964 and its subsequent effects, and the work of the Industrial Training Boards set up under that Act.

27. Council of Europe. Council for Cultural Co-operation. *School systems: a guide*. Rev. ed. Strasbourg, 1970. 291 p., figs. (Education in Europe. Section II: General and Technical Education, 12) [Also published in French]

This informative guide provides, for each member country of the Council, a brief description of the school system, with two diagrams, one simple and generalized and the other more detailed and annotated with school names, qualifications, mode of attendance, and showing so far as possible routes of academic progression and objectives. It is particularly well designed to show the relationship between general and technical education. A classification system is used which enables schools to be identified in type by a numerical and alphabetical code. A descriptive outline prefaces the diagrams for each country to give a clear picture of the present situation.

28. Deighton, L.C. *The Encyclopaedia of education*. New York, Macmillan and the Free Press, 1971. 10v. bibl.

Over 1,000 articles on the various aspects of educational practice, dealing mainly with American education, although a considerable number of articles do deal with compara-

tive education, international aspects, and the educational programmes of over 100 countries. The index contains a directory of contributors and titles of articles, as well as conceptual headings.

29. De Keyser, C.C.; Falleyn, J.A.C.; Goethals, J.-M. *Comparative repertory of European qualifications*. Vol. 1. France and the United Kingdom. Leuven, Acco. 1970. 354 p.

Comparison of French and British general and technical qualifications. Preceding this comparison is a detailed study of the systems of technical/vocational education and of teacher training in the two countries. The qualifications are classified in accordance with a system which it is intended to use for succeeding countries also. Alphabetical indexes are compiled. Further volumes to cover other countries of Europe are in process of being published.

30. *Deutscher Ingenieurschulführer*. Führer durch die deutschen Ingenieurakademien und Fachhochschulen [Guide to the German colleges of technology]. Berlin, VDE-Verlag, 1971. 635/229 p.

This 15th edition brings out clearly the great changes that have occurred in recent years in the character of the erstwhile *Höhere Fachschulen*. Many of these have now been given status comparable to that of the universities and *Hochschulen* in a move to unify the engineering profession in the Federal Republic of Germany. The establishments are classified in sections for each of the Länder of the Federal Republic. Full particulars of interest to intending students are given on the various colleges: history, administration, admission requirements, courses offered, teaching staff, costs, student societies, and so on. There is an introductory section on careers, and the legal implications of engineering training, and a large appendix displaying career opportunities with German industry and the firms offering employment.

31. France. Direction de la Documentation. *La formation des cadres scientifiques et techniques en République Populaire de Chine (1949-1963)*. Paris, 1969. 50 p., figs. (Documentation française—Notes et études documentaires n° 3576).

Monograph on the technical education of engineers and technicians, within the framework of educational planning in the People's Republic of China during 1949-1963. It covers enrolment in universities and technological institutes, manpower needs for university graduates, including women, industrial research, costs of higher education, wages, technical assistance by the USSR, international co-operation and notes on the social sciences.

32. Grégoire, R. *Vocational education*. Paris, Organization for Economic Co-operation and Development, 1967. 138 p.

The term 'vocational education' is used to indicate the training of skilled workers and corresponding clerical staff. The three chapters cover: 1. the various systems of vocational education and training in the USA and Europe; 2. training related to social issues; 3. trends in education of this type.

33. *The Industrial training year book*. London, Kogan Page, 1971. 732 p.

Complete guide to the whole field of training and technical education in the United Kingdom. Whilst intended primarily for training officers in industry it is useful also to the educationist since the work gives much detail on the development of the Industrial Training Act 1964, the Industrial Training Boards, education authorities and colleges, professional bodies, universities and the many qualifications involved in this field of work.

34. Japan. Ministry of Education, *Sangyo-kyoiku hachiju nen shi* [Historical review of 80 years' development of technical and vocational education]. Tokyo, 1966. 736 p.

35. Japanese National Commission for Unesco. *Nippon ni okeru nogyo-kyoiko no hatten ni kansuru kenkyu* [Study on the development of agricultural education in Japan]. Tokyo, 1970. 224 p.

This study deals with the historical development of agricultural education in Japan, including the system, content and methods, facilities and equipment, and teacher training. With ample provision of supporting material, reference is also made to the development of agriculture and techniques used.

36. Korea (Republic of). Ministry of Public Information. *Booklet on the educational system in Korea (R)*. Seoul, 1968. 33 p.

Covers historical aspects, social change, primary education, secondary education, vocational training, technical education, teacher training, physical education, adult education, educational planning, etc.

37. Machado, F.F. *Possibilidades educativas em Portugal* [Educational possibilities in Portugal]. Nova ed. Lisboa, Instituto de Orientação Profissional Maria Luisa Barbosa de Carvalho - Organização Escolar Portuguesa, 1966. 846 p., illus.

38. Organisation for Economic Co-operation and Development (OECD). *Aid to education in less developed countries*. Paris, April 1971. 270 p., figs.

Based on work carried out in the preceding two years within the Development Assistance Committee of the Organization, this document is divided into five sections: introduction to the theme; educational needs in this context - targets, primary, secondary and higher phases, work-oriented literacy for adults, costs, and future developments; bilateral educational aid programmes of the various member countries of the Development Assistance Committee; multilateral aid; summing-up and conclusion. The greater part of the work is devoted to more detailed notes on bilateral aid from individual countries. Such notes outline the administrative arrangements for advising and regulating educational aid to less developed countries, with much statistical information on geographical distribution, volume and type of aid given. The pages devoted to multilateral aid programmes include sections on Unesco, the World Bank, Inter-American Development Bank and the Commission of European Communities. Finally, a set of case studies takes up interesting projects here and there for detailed description and analysis. These deal with a wide range of educational centres and technical training establishments. They are followed by statistical information with tables. This very comprehensive work on aspects of educational aid to the developing countries will be of much interest and value to all concerned in such endeavours; it will, however, rapidly 'date' owing to the ever-changing circumstances associated with the economic development of the countries concerned. Almost continual revision would seem to be necessary especially in regard to the statistical information.

39. Organisation for Economic Co-operation and Development (OECD). *Investissement dans l'enseignement—Irlande*. Paris, 1966. XXXIII, 483 p., figs.

OECD publication on investment in education, includes consideration of vocational training.

40. Pan Indian Ocean Conference on Technical Education and Training, Perth, Western Australia, 1966. *Outline of Vocational Training—Reports*. Perth, Department of Labour and National Service, 1966. 18 pts. figs., illus.

A series of booklets on vocational training in various countries—Australia, India, Indonesia, Japan, Kenya, Korea (R), Malawi, Malaysia, New Zealand, Pakistan, the Philippines, Singapore, Sri Lanka, Tanzania, Thailand, United Kingdom, United States, and Zambia. Each contains a short general study of the country and sections on general education, technical education, apprenticeship and in-plant training.

41. Porter, D. *Technical and vocational education: six area studies with special reference to technical/vocational schools*. Strasbourg, Council for Cultural Co-operation of the Council of Europe, 1970. 151 p., figs. [Also published in French]

This precise and informative guide takes as its main basis six studies made in local areas of the following countries: France, Federal Republic of Germany, Italy, Netherlands, Sweden and the United Kingdom. The structure of the school system is shown diagrammatically and its objectives are fully stated. The concluding section makes a rather more subjective assessment of the relative position in a European setting: trends, future problems and possible changes.

42. Poudade, P. *L'enseignement en Roumanie*. Paris, 1972. 24 p., figs., illus. (Documentation française: notes et études documentaires n° 3875).

Study of the education system in Romania: history; primary, secondary, higher and technical education and vocational training; research and teacher training.

43. Price, R.F. *Education in communist China*. London, Routledge and Kegan Paul, 1970. 308 p., bibl. (World Education Series)

This book gives the ethos and ideology behind the development of the present system of education in China as well as much practical detail. The various chapters cover: history, aims of Mao, obstacles to educational reform, full-time schools, part-time schools and classes, teachers, moral-political education, students. In the field of technical/vocational education the 'part-work' schools for craft and technician occupations in industry, agriculture and commerce are described.

44. Priestley, Barbara. *British qualifications: a comprehensive guide to educational, technical, professional and academic qualifications in Britain*. Preface by Edward Short. 2nd. ed. London, Kogan Page, 1970. 1,278 p.

The work is in six main sections. The first describes the system of secondary, further and higher education in the three territories of England and Wales, Scotland, and Northern Ireland, together with the institutions to be found and the types of qualifications to which their courses lead. The second section deals with examinations and qualifications associated with the work of secondary schools and the third with technical, commercial and other qualifications obtained in the field of further education, degrees of the Council for National Academic Awards, and the Diploma in Technology. The fourth section contains a list of degrees, diplomas and other certificates awarded by the universities, and a summary of first degrees arranged by subject of study. The last two sections are devoted respectively to the professional institutions and their grades of membership, and to the qualifications appropriate to each trade and profession. A general index facilitates reference to any particular qualification, subject, or examining body.

45. Rohringer, J. *Die österreichische Berufsschule* [The Austrian vocational school]. Weinheim, Basel, Beltz, 1970. 213 p.

There are eight chapters in this comprehensive work: I. Introduction. II. Historical development. III. The mission of the vocational school and its place in the general system, courses of study and different functions, relations with industry, and apprentice training. IV. Organization, construction and maintenance, costs, private schools. V. The apprentice, compulsory attendance rules, employment, final examinations, further education and training. VI. The staff in vocational schools, training, staff structure, professional rights and representation. VII. Homecraft schools, compulsory attendance in general, exceptions. VIII. Summary, and future possibilities.

46. Sudale, E.W. *Continued education: a study of the education of young European school leavers during their last years at school and early years at work*. Strasbourg, Council of Europe, Council for Cultural Co-operation, 1971. 117 p.

47. Tatchev, Ilia; Yanev, Y.; Kouzarov, L. *Obrazovaniето v narodna republika Bgaria 1944-1969* [Public education in Bulgaria, 1944-1969] Sofia, Narodna Prosveta, 1969. 200 p., figs., illus.

Synoptic account of the development of education in Bulgaria during the period indicated, with copious information on vocational education and on teacher training and research.

48. Tsang, C.S. *Society, schools and progress in China*. Oxford, Pergamon Press, 1968. XX, 333 p.

A study of the political aspects and social implications of the education system in the People's Republic of China. The work covers historical aspects, social change, cultural change, relevant aspects of public administration, the role of the Communist party, general education—primary, secondary, higher, vocational training, and the position of intellectuals in political leadership.

49. Unesco. *Educational planning in the USSR*. Paris, Unesco, International Institute for Educational Planning, 1968. 295 p.

A comprehensive survey of the general education system in the USSR.

50. Unesco-IBE. *The International yearbook of education*, Vol. XXXI, 1969. Paris, Geneva, 1970. 235 p. [Also published in French]

For 75 countries the general trends of development, policy, research and problems are stated; and the main directions of world significance are collated. There is a section giving the more important educational statistics.

51. Warren, H.A. *Vocational and technical education*. Paris, Unesco, 1967. 222 p. (Monographs on education, 6) [Also published in French]

Comparative study of practice and trends in ten countries of Europe. One of the chapters attempts a synthesis, and presents some of the more important comparisons. Specimen programmes of study are given in the Appendix.

52. The World year book of education, 1968. *Education within industry*. Joint editors: J.A. Lauwerys [and] D.G. Scanlon. Published in association with the University of London Institute of Education and Teachers College, Columbia University, New York. London, Evans Brothers, 1968. 382 p.

The interacting influences of State and industry upon education and upon the calls made for educated and skilled personnel, as well as the more personal problems involved, are considered in three sections covering respectively: theoretical issues; national and historical studies; and case studies from major industries and enterprises throughout the world.

II. Policies and administrative aspects

53. Activités de la Communauté économique européenne vers une politique communautaire de l'éducation et de la recherche. *Informations SIDA* (Lille), n° 170, avril 1968, p. 18-21.

An extract from the 10th report of the European Economic Community, regarding the base of a Community policy for training and research.

54. Algeria. Laws, statutes, etc. *Ordonnance n° 69-106 du 26 décembre 1969 portant création des instituts de technologie en Algérie.*

The purpose stated is to train middle and senior managerial staff, and the institutes are to be set up as corporate bodies with financial autonomy.

55. Australia. Commonwealth Advisory Committee on Advanced Education. *Colleges of advanced education 1967-1969. A first report.* Canberra, Commonwealth Government Printer, 1966. 132 p., illus., bibl.

The report proposes the creation of multi-purpose colleges of tertiary education which should provide a greater breadth of education than do most of the existing technical colleges. These colleges will differ from existing universities in that their vocational purpose will be more direct and apparent, notwithstanding a content of liberal arts in their curricula.

56. Australia. Department of Labour. *Training for industry and commerce.* Report of the National Conference. Canberra, Australian Government Publishing Service, 1971. 281 p.

This report sets out priorities necessary to ensure that a trained manpower may meet the estimated future needs for each occupational level and activity.

57. Badr, S. *Frauenbildung und Frauenbewegung in Ägypten* [Education and the Women's Movement in Egypt]. Düsseldorf, Kölner Arbeiten zur Pädagogik. A. Henn Verlag, 1968. 239 p.

Includes interesting details of women's occupations and relevant training, women in trade, industry and business, and some 'firsts' where women have entered new or unusual professions.

58. Bailey, R. Productivity in further education. *Technical education* (London), vol. 9, April 1967, p. 148-151.

An article which maintains that the theory of productivity should be applied to further education, and indicating how this might be done, for example, by extending the school year. The 'product' is admittedly more difficult to specify than in industry, however.

59. Billecocq, P. La politique des enseignements techniques et professionnels. *L'Education* (Paris) n° 38. 25 septembre 1969, p. 19-20.

A statement by the Secretary of State to a parliamentary committee concerning future policy in this field. There is to be no division between technical and general forms of education, which must both have the same status. A centre for study and research on occupational qualifications is to be set up for the purpose of: ascertaining present and future supply and demand for skilled manpower; establishing job specifications for each occupation; disseminating such information to training institutions. Future technical and vocational education must include the concept of lifelong education, with the object also of enabling and assisting the individual to find suitable employment throughout his working life.

60. Brazil. Presidência da República. Ação setorial—grandes prioridades: Revolução na Educação [Action by sectors—main lines of priority: revolution in education]. *Metas e bases para a ação do Governo.* Rio de Janeiro, Instituto brasileiro de geografia e estatísticas, 1970, p. 51-63.

Synoptic account of the present position and future intentions in Brazil. National objectives are re-defined by sectors, and for education the strategic goal is the blending of humanistic culture with the requirements of a technical age. This foreshadows a reform of the technical and industrial schools at the secondary level.

61. Burt, S.M. *Industry and vocational-technical education*. New York and London, etc., McGraw-Hill, 1967. 536 p.

Comprehensive survey of co-operation in industry/education in the USA in the fields of technical and vocational education and training. It comprises three parts: an overview of co-operation in industrial education (advisory committees and state advisory council, planning programmes, efficient training, recruitment, counselling and placement, evaluation of programmes, manpower needs and service); case studies; review of legislation.

62. Callaway, A.; Musone, A. *Financing of education in Nigeria*. Paris, Unesco, International Institute for Educational Planning, 1968. 150 p. (African research monographs)

A booklet relating expenditure on education to general economic development: level of education, teacher training, capital sources, recurrent costs, finance by regions, type of education and pupil, are all brought into the survey. Three types of establishments are mentioned: technical institutes, trade centres and handicraft centres.

63. Central Treaty Organisation, Ankara. *Report on Cento Conference on Industrial Vocational Education*, held in Ramsar, Iran, June 1968. Ankara, 1969. 182 p., figs., illus.

Conference report on the need for and measures to promote vocational training and industrial technical education to meet manpower needs for skilled workers in Iran, Pakistan and Turkey. It covers the development of human resources, the importance of vocational guidance, manpower planning, further training, training programmes for instructors and teachers, etc.

64. Cerych, L. *L'aide extérieure et la planification de l'éducation en Côte d'Ivoire*. Paris, Unesco, The International Institute for Educational Planning, 1967. 49 p. (African monographs no. 12)

This survey gives financial details of aid and compares the figures with corresponding ones for the English-speaking countries South of the Sahara. It is noted that general education gets more than 3 times as much as technical, and that 81% of the staff in the latter division were foreign, mostly French. Developments in rural technical education are commented on and analysed.

65. Chabaud, Jacqueline. *The education and advancement of women*. Paris, Unesco, 1970. 155 p. [Also published in French]

The efforts made, and the problems, in furthering the advancement of women through education and training; and the work of Unesco in this respect.

66. Chile. Presidencia de la República. *Primer mensaje del Presidente Salvador Allende ante el Congreso Pleno. Parte II-Educación*. Santiago, 1971. 15 p.

Includes a good deal on the organization of vocational training.

67. Colombia. Servicio Nacional de Aprendizaje (SENA). *La formación profesional en Colombia* [Vocational training in Colombia]. Bogotá, CINTERFOR - SENA.

Co-ordination among general, technical, agricultural and vocational secondary education and vocational training. Manpower and unemployment.

68. Colombia. *Estructura legal del Servicio Nacional de Aprendizaje (SENA) - Decreto num. 3123 de 26 de diciembre de 1968* [The constitution of the National Apprenticeship Service (SENA) - Decree No. 3123 26 December 1968]. Bogotá, Servicio Nacional de Aprendizaje, 1969. 35 p.

This decree supersedes that of 1957 and makes a number of alterations in the constitu-

tion and organization of the national apprenticeship service (SENA). Status, objectives, finance; national and regional management and administrations; financing and employment of apprentices; technical co-operation with other organizations; are all amplified and detailed. A 2 per cent levy on private undertakings is prescribed.

69. Colombo Plan. *Seminar on Manpower Assessment and Educational Planning*, Colombo, 1966. Colombo Plan Bureau. Summary Record of Proceedings, Seminar on Manpower Assessment and Educational Planning. Colombo, 1966. XVII, 180 p.

Report on a seminar which studied the relationship of manpower to educational planning in developing countries, with particular reference to vocational training programmes in Sri Lanka. Includes papers and records of discussions on employment policy, occupational structure, labour administration, training programmes.

70. Colombo Plan. *National Seminar on Planning of Vocational and Technical Training*. Colombo, Colombo Plan Bureau, 1969. 123 p.

Report of a seminar drawing attention to the urgent need for planning and co-ordination in the provision of vocational and technical education.

71. Commonwealth Secretariat. Commonwealth Education Liaison Committee. *Education and training of technicians*. London, HMSO, 1967. 326 p.

Report of a conference of experts and those interested in technician training in the Commonwealth, held in 1966. Particular attention was paid to the need for adaptability and breadth of outlook; the need for collaboration with employers; and the status of technicians. Special papers were presented on manpower planning; type and content of courses; planning and equipping institutions; supply and training of staff; entrance requirements; administration and inspection. Working groups discussed technicians in specific fields such as engineering and agriculture. Finally, a paper was presented on the present and planned provision for technicians in 23 of the countries, with statistics. The cogent point is made that the whole effort depends on an adequate supply of suitable teaching staff and of suitable facilities for their training.

72. Confédération des syndicats chrétiens. *L'enseignement des filles et ses possibilités d'avenir pour la classe ouvrière belge*. Bruxelles, Confédération des Syndicats chrétiens. 69 p.

Report drawing attention to the training of women and girls in vocational and technical schools and to the problems arising over the employment of women; reforms proposed.

73. Conseil national du patronat français (CNPF). *La formation des hommes dans la société moderne*. Paris, Editions techniques patronales, 1971. 38 p.

A paper discussing the kind of contacts necessary between industry and education to achieve good training in the present society. Apprenticeship and technical education, the university system, lifelong education and management training are among the topics covered.

74. Council of Europe. *Permanent education*. Council for Cultural Co-operation of the Council of Europe. Strasbourg, 1970. 512 p.

Outcome of a study of the principles and practice of lifelong education.

75. de Crayencour, P. *Il riconoscimento reciproco dei diplomi nel settore tecnico* [Mutual recognition of diplomas in technical fields]. Roma, UNITESA, 1969. 12 p. (1st international congress on vocational training in Europe)

The advantages and difficulties of putting this mutual recognition into practice.

76. Cuba. Ministerio de Relaciones Exteriores. *Cuba: une grande école*. La Habana, 1966. 28 p.

Booklet describing the education system in Cuba, including technical and polytechnical aspects.

77. Drouet, P. Economic criteria governing the choice of vocational training systems. *International labour review* (Geneva), vol. 98, no. 3, September 1968, p. 193-223.

Based on a survey of five Western European countries, the article suggests criteria for selecting a system of vocational training, and ways in which these criteria may be applied to a developing country. For the five countries (Belgium, France, Federal Republic of Germany, Netherlands, United Kingdom) six modes of training for skilled workers in the metal industries were considered: full-time in school; part-time, day release; part-time, block release; sandwich systems; part-time evening; full-time in training centre. Among the criteria considered were flexibility, method of finance, acceptability, admission standards, duration and speed. The general conclusion was that any one of these systems might be the most useful according to local circumstances.

78. Dunbar, R.E. Progress and planning in technical education. *Australian technical teacher*. (Brisbane), vol. 1, no. 1, May 1969, p. 5-11.

A policy statement by the Director, Department of Technical Education, New South Wales, outlining future trends and developments in that State, with particular emphasis on certificate and trade courses.

79. El-Samarai, S.A. Birnameg el-tassnie wa al-kowa el-amila fi El-Iraq [Industrialization programme and manpower in Iraq]. *Al-Sinai* (Baghdad), vol. 9, no. 3, Jul.-Sept. 1968, p.41-46.

An article analysing the education system and estimating that it is producing insufficient vocationally trained manpower. Training centres are to be set up and a Department of Vocational Training created within the Ministry of Education.

80. Ethiopia. *Handbook for members of the National Advisory Council for vocational and technical education*. Addis Ababa, Ministry of Education, December 1967. 12 p.

A handbook describing the functions of the Council, its constitution and meetings.

81. La femme et l'industrie. *Avenirs* (Paris), no. 224-225, mai-juin 1971. 212 p.

In this special issue the kind and amount of technical training for women is discussed; the level of employment to which they attain; and statistics giving a survey of these conditions.

82. Finland. Laws, statutes, etc. Laki konlujarjestyksen perusteista, 26 heinakuuta, 1968 [Law of the principles of public education 26 July 1968]. *Suomen asetuskokelma* (Helsinki), no. 467, 1968.

Lays down the structure of the comprehensive school to take effect 1 August 1970; elective subjects in the last three years of a nine-year school career.

83. Finland. *Koulutusrakennekomitean mietinto (Komiteamietinto 1969: A 13)* [Report of committee on the structure of the education system (Committee report 1969: A. 13)]. Helsinki. Valtion painatuskeskus, 1969. 146 p.

The committee's terms of reference were to examine the improvement of education after comprehensive school, primarily from the point of view of manpower and vocational requirements. Education as an intellectual activity with inherent value was not therefore considered in detail. The report gives an account of the Finnish education system and of

the development of occupational and educational structures, and of the methods used in estimating quantitative educational demand. The report includes a development analysis of such structures and an estimate of quantitative development of those educated. The labour market situation in 1985 is outlined. According to these estimates, by that date one half of the country's total labour power of 2.5 million will have received institutional vocational education, compared to one sixth of 2 million in 1960—a fourfold growth in 25 years.

84. Finland. *Teknillisen opetuksen komiteanmietinto (Komiteanmietinto 1971: A8)* [Report of the committee on technical education (Committee report 1971: A 8)]. Helsinki, Valtion painatuskeskus, 1971. 127 p.

This committee on technical education studied the present technical schools and the changes taking place in them after the comprehensive school reform. The committee also paid attention to education in vocational schools and to the further education in institutes providing the most advanced technical education. The present four-level system of technical education in Finland is the result of long development and the committee felt that the system should be maintained. Technical education should have a close interaction with industrial life. The implementation of the comprehensive school system means an improvement in general basic education from the point of view of technical and vocational schools. The committee on technical education proposed that: the present technical colleges should be replaced by colleges of technology where both the lower and the higher diplomas of engineering could be obtained; the credit system and a wide range of subject combinations be made possible; a student aiming at the lower diploma of engineering should have a chance after one year to transfer to studies leading to the higher diploma; it should be possible to transfer from colleges of technology to different university faculties.

85. Georgiev, A. Oprejeljane ikonomičeskata efektivnost na specialnoto obrazovanie [The definition of economic efficiency of specialist education]. *Narodna prosveta* (Sofia), 1972, p. 404-410.

Various methods have been put forward to measure the efficiency of vocationally biased forms of education. The author discusses some of these in relation to national finance.

86. Germany (Federal Republic). Laws, statutes, etc. *Berufsbildungsgesetz*. [Vocational Training Act]. *Bundesgesetzblatt* (Bonn), part 1, no. 75, 16 August 1969, p. 1112-1137.

An Act to regulate vocational training in the Federal Republic of Germany other than in schools maintained by the *Land*.

87. Gluvacov, A. Probleme ale repartitiei si calificarii fortei de munca feminine. *Probleme economice* (Bucuresti), vol. 23 no. 7, 1970, p. 50-61., figs.

This analysis of statistical data drawn from a survey of the situation of the woman worker in the occupational structure of Romania compares the employment pattern of women in socialist countries, vocational training, occupational qualifications, and includes forecasts of manpower needs justifying the greater participation of women in economic activities.

88. Guatemala. Oficina de Planeamiento Integral de la Educación. *Plan nacional de educación para la república de Guatemala, cuatrienio 1969-1972* [National Plan for Education, Republic of Guatemala, 4-year period 1969-1972]. Guatemala, Editorial José de Pineda Ibarra, 1969. 391 p. figs.

Outline of the educational planning programme, covering primary, secondary, higher and technical education and vocational training, finance and buildings.

89. Haeren, R. van *Rapport au Gouvernement du Royaume du Maroc sur la formation professionnelle rurale*. Genève, Bureau international du travail, 1967. 77 p., figs.

This project report on the organization of a national training programme for rural youth in Morocco includes vocational training programmes for agriculture, an evaluation of educational planning for rural areas, training centres and methods, teacher training, and a reform project affecting pre-vocational training.

90. Harbison, F. *Educational planning and human resource development*. Paris, Unesco, 1967. 34 p.

A booklet concerning educational planning in policies, strategies, and priorities, the levels of education in qualitative and quantitative aspects, needs and demands, the aims of education, the place of liberal arts in relation to science, formal or other methods, incentives, etc.

91. Harburger, P. *Vocational education in Israel*. Jerusalem, 1967. 51 p.

92. Harras, H. ILO meeting of experts on the programming of pre-vocational training schemes, Geneva, 1968. *Pre-vocational training in the United Arab Republic*. Geneva, 1968. 25 p., figs. (ILO-MEPVT/1968/II) [Also published in French and Spanish]

Analysis of the pre-vocational training programme adopted in Egypt: teacher training, curriculum, training centres, budget etc.

93. Hungary. Laws, statutes etc. 1969. évi VI. törvény a szakmunkásképzésről [Law on training of skilled workers]. *Magyar Közlöny* (Budapest), no. 77, 8 October 1969, p. 723-726.

Under the provisions of this law the vocational schools are to be the main instrument of training the skilled worker and during the course, which may be from one to three years in duration, the future worker will receive some of the secondary education as given in the senior secondary school. Practical training may be given in the school workshops or in productive works by agreement.

94. India. Ministry of Education. *Report of the Education Commission 1964-66*. New Delhi, Government of India, 1966.

Report of a Government commission on education which surveys the whole field: objectives, structure, enrolments in various programmes, teacher training, manpower needs, administration and costs. The main aims stated are: seven years' primary education for every child by 1985; secondary and higher education for all capable of it, as far as consistent with the need for such manpower; development of the technical and vocational aspects of education especially in relation to agriculture; eradication of mass illiteracy. Amongst the intentions in technical fields are: propaganda to raise the status and popular esteem of this branch, vocational secondary education, technician training in polytechnics, further diversification of graduate technologists outside the traditional engineering classifications, to lessen the shortage of teachers for these purposes.

95. International Labour Office. *Rapport au gouvernement de la Tunisie sur la préparation professionnelle des jeunes filles et des femmes en Tunisie*. Genève, Bureau international du travail, 1966. 78 p. (OIT/OTA/Tunisie/R.16)

Report of a technical co-operation project including a study of the pre-vocational and vocational programmes offered to girls, the present state of education and employment for women, difficulties of a social, institutional or other character and an account of a pilot scheme for girls over 17 years of age.

96. Israel. Misrad ha-avoda. Ha-rashut le-tikhnun koah adam. [Ministry of Labour, Manpower Authority]. *Kedaiyut ha-hashka'a ba-hinukh ha-mikzo'i be-yisrael* [The profitability of investment in vocational education in Israel]. Jerusalem, 1969. 40 p.

In this study, benefits to the individual and to society are evaluated and compared with the financial investment corresponding to various programmes of the vocational education system. Benefits were measured by the increase of earning power of the trainees. Analysis indicates that the benefits of a two-year course of training are realized immediately but those undergoing a four-year course do not reap immediate rewards. Up to the working age of 30 a two-year training is the more profitable investment but the reverse is true if the trainee continues in work after that age. Vocational training programmes yield greater benefits to the society than to the individual so trained. Earning ability of persons with vocational training can be taken as higher than those with general high school education only.

97. Israel. Misrad ha-hinukh ve-ha-tarbut. Maarekhet ha-hinukh ha-tekhnologi [Ministry of Education and Culture, Division of Technological Education]. *Ha-nativ ha-tekhnologi be-vate ha-sefer ha-al yesodiyim be-shenat ha-limudim 1972* [The technical network in post-elementary schools in the year 1972]. Jerusalem, 1972. 68 p.

98. Israel. Laws, statutes, etc. *Hok avodat ha-no'ar. Tikun* [Law for working youth—amendment] Reshumot: Sepher ha-hukim, 5732, no. 662. [Laws of Israel, 1972], p. 123-127.

This amendment raises the minimum employment age from 14 years to 15 and specifies that working youth between the ages of 15 and 18 be required to attend one day (eight hours) of classes per week.

99. Jackson, W. *Manpower for engineering and technology*. London, British Association for Commercial and Industrial Education, 1970. 14 p.

Reprint of a lecture on technician education, describing the need to enlarge the educational preparation of engineers and to bring technical competency up to date at regular intervals, and the role of supporting staff. The ratio of technicians to engineers in this respect is still too low and too many graduates are doing technician level work.

100. Jackson, E.T. A policy statement by the Director of Technical Education for the State of Victoria, Australia, on the future role and operation of technical schools and colleges. *Issues in technical education* (Melbourne), vol. 2, no. 1, March 1971, p. 16-24.

101. Japan. Laws, statutes, etc. Shokugyokunren-ho. [Vocational Training Act 1969]. Tokyo, Ministry of Labour, July 1969.

An Act to harmonize vocational training activities in Japan.

102. Kanapathy, V. Education, manpower and Malaysian economic development. *Ekonomi journal* (Kuala Lumpur), 8 December 1967, p. 5-24.

Article on the implications for economic development of education, and manpower development in Malaysia—covers costs and student enrolments in primary, secondary, technical, university and higher education, educational planning training programmes for skilled workers etc.

103. Keir, R.A. Financing vocational training in New Zealand. *New Zealand Manufacturer* (Wellington), vol. 20 no. 6, April 1968, p. 8-9.

An article discussing and assessing the financial and other resources in New Zealand that could be devoted to the purpose of technical and vocational training. The setting up of a Central Training Council, and a levy by which to raise funds, are considered. Technical institutions are considered to have insufficient financial support at present.

104. Koch, E.A. *Rapport sur l'éducation ouvrière dans la République Arabe Syrienne*. Genève, Organisation internationale du travail, 1963. 26 p., figs.

Project report surveying the present state of workers' education in Syria, covering trade union structure, training programmes, and recommendations.

105. Korea (Republic of). *The second five-year plan for development of science and technology, 1967-71*. Seoul, 1966. 137 p., figs.

Outline of manpower and educational planning projects within the national plan for the Republic of Korea in 1967-71 to provide scientists, engineers and technicians to meet the needs of technological change. It covers the demand for teachers, research, vocational training and technical assistance.

106. Kotljar, A.E. *Rabocaja sila v SSSR* [Manpower in the USSR]. Moskva, Izdatel'stvo 'Mysl', 1967. 176 p.

A book on the problems involved in renewing the labour force, with particular reference to the factors of general and technical education and training and manpower distribution and utilization.

107. Kovács, János. *Szakképzés és népgazdaság* [Vocational training and the national economy]. Budapest, Közgazdasági és Jogi, 1968. 174 p.

Examining the economic problems of vocational training in Hungary, the author estimates that national revenues are in direct proportion to vocational instruction of the labour force, there being also many other factors. He regards money spent on vocational training as an investment which increases productive capacity. To test these theories, and for use in educational planning, he has created some models and processes of calculation which give an appreciation of the economic situation regarding vocational training in Hungary.

108. Kunji, K. *Sangyo kyoiku: hatten to kadai* [Industrial and vocational education: its developments and problems]. Tokyo, Teikoku chiho gyosei gakkai, 1969. 369 p.

109. Laot, J. La CFDT (Confédération française démocratique du travail) et l'éducation permanente des femmes travailleuses. *Education permanente* (Nancy), n° 2, avril/mai/juin 1969, p. 17-29.

Proposals and recommendations by one of the main trade unions of France in regard to lifelong education so far as it may affect women and girls. About one-third of the pupils at vocational schools are girls but at present only 4 per cent of those enrolled in adult vocational training are women. Girls expect less of their future occupations than boys, and most are in non-industrial sections, e.g. commerce or office employment. The article concludes that the situation could be improved.

110. Laurent, P. Un exposé de M. Pierre Laurent. *L'Education nationale* (Paris), vol. 22, n° 793, 2 juin 1966, p. 7-8, 32-34.

This statement by the Secretary-General of the Ministry of Education concerns current reforms in vocational and technical education, the so-called 'long' and 'short' courses, the certificates awarded, and details of the *instituts universitaires de technologie*. Multi-purpose secondary schools are to be developed as *collèges d'enseignement secondaires*, the present *collèges d'enseignement technique* are to be *collèges de second cycle* and the *brevet d'aptitude professionnelle* (CAP) is to be replaced, at least in part, by the *brevet d'enseignement professionnel* (BEP). At the end of the 'long' technical cycle the qualification *baccalauréat de technicien* is to be introduced as well as the older *baccalauréat technique*, the former being appropriate to middle-level managerial occupations and the latter for general purposes. A reform of the teacher training college for vocational instructors, the ENNA, is under consideration.

111. Lave, R.; Kyle, D. The application of systems analysis to educational planning. *Comparative education review*. (Kent, Ohio), vol. 12, no. 1, February 1968, p. 39-56.

An article which calls for a new analytical method of dealing with complex educational decisions; a systems analysis approach applied to the educational structure. Such an approach must inevitably stress the following factors: education is part of the socio-economic system; practical aspects of decisions made must be considered in the analysis; alternatives in policy and method must be repeatedly analysed; the value of quantitative answers, in respect to funds, buildings, students, etc.

112. Lawson, R.V. Planning education and training for industry's needs. In: *Planning for effective education*. Melbourne, Australian College of Education, 1971, p. 79-100.

This conference paper deals with the training of semi-skilled and skilled tradesmen and technicians, and discusses the relationship of secondary education to the needs of industry. Far too little is being done for the non-matriculant student, and in general too much emphasis is placed on education for the post-matriculant. Secondary education at present does little to prepare students who enter industry from schools each year, and many courses in the schools will need to be adapted to suit these students. Many of the students show particular aptitudes for work in industry, and are intelligent children. At present, industry's ideas of what it needs from school-leavers are confused and often mistaken. Research is needed to clarify the requirements, and there is need for realistic co-operation between education authorities and employers. It is suggested that this can be achieved through advisory boards set up by the education departments, and representing both employers and employees. The re-training of displaced workers should also be considered. Some form of compulsory education should be given to the 100,000 early school leavers. A more modern and flexible system should replace the present form of apprenticeship. A Commonwealth committee should be set up to co-ordinate names and standards of courses throughout Australia.

113. Malagodi, A. L'Istruzione industriale nell'Arabia Saudita [Technical instruction in Saudi Arabia]. *Istruzione tecnica e professionale* (Roma), vol. 6 no. 6, novembre-dicembre 1965, p. 403-408.

Educational planning to provide secondary education, technical education and vocational training in Saudi Arabia with technical assistance role of Italy.

114. Malawi. Education (Special Advisory Council) *National Advisory Council for Technical Education and Training Order 1971*. Malawi Gazette Supplement, Zomba, no. 36a, 3 September 1971. Government Notice no. 205, 24 August 1971, p. 536-37.

An Order setting up a National Advisory Council for Technical Education and Training with the object of advising the Minister of Education on all matters relating to technical education and training. The membership of the Council is defined, and provision is made for co-opting relevant experts in this field of work.

115. Mark, J. *The changing role of British aid to education in developing countries*. London, Overseas Development Administration, Foreign and Commonwealth Office.

This paper, read to the 11th Annual Conference (March 1972) of Tutors to Commonwealth and Overseas Teachers, discusses the changing principles, necessities and problems of British aid to education abroad.

116. Marosi, J. *ILO Report to the Government of the Union of Burma on co-operative education and training*. Geneva, 1967. 48 p., figs.

This project report on the formulation of a co-operative education and training programme geared to the needs of Burma contains information on the present position and recommendations concerning training courses to improve it, and on training centres.

117. Matilainen, J. Ammattikoulutuksen kehittäminen [Development of vocational education]. *Ammattikasvatus* (Helsinki), vol. 27, no. 2, 1971, p. 40-42; no. 3, p. 94-96; no. 4 p. 146-148, 153; no. 5 p. 188-189, 216.
118. Max-Planck Institut. *Arbeitskräfteprognosen als Grundlage der Bildungsplanung: eine kritische Analyse* [Estimates of manpower requirements as a basis for educational planning]. Berlin, Max-Planck Institut für Bildungsforschung, 1971. 212 p. (Studien und Berichte Nr. 23)
119. Mitropolitski, M. Razvitie na sistemata za podgosovka na izpēlnitelski kadri [Developments in the system of training the operative cadres]. *Prof. obrazovanie* (Sofia), no. 12, 1971, p. 23-37.
120. Model na sistemata za profesionalna podgotovka, prepodgotovka i povišvane kvalifikacijata na rabotnicite v Narodna republika Bēgarija [The pattern of the system of vocational training, of re-training and of up-grading of workers in the People's Republic of Bulgaria]. *Narodna prosveta* (Sofia), vol. 28, no. 4, 1972, p. 26-37.
121. Netherlands. Laws, statutes etc. *Wet op het voortgezet onderwijs* [Law on post-primary education]. *Staatsblad van het Koninkrijk der Nederlanden ('s-Gravenhage)*, no. 387, 1967, p. 1075-1090.
- This Act reforms and lays down the structure of all Dutch education subsequent to the basic primary school of six years' duration. The main divisions, academically, are: (a) education preparatory to university studies; (b) higher, middle and lower general education; (c) higher, middle and lower level technical/vocational education. In technical education there are technical colleges of higher technician level, and technical schools of middle technician grade as well as a vocational school. Details of syllabuses, examinations, finance, inspection, etc. are included.
122. The new degree system. *Trends in education* (London), no. 1, January 1966, p. 6-12.
- Article describing the setting up of the Council for National Academic Awards (CNAA) and its system of approved degree-granting courses offered by polytechnics and some technical colleges throughout the United Kingdom. Reference is made to the historical significance of this event.
123. Newstead, G. Looking ahead in technical education. *Australian technical teacher* (Brisbane), vol. 4, no. 1, March 1972, p. 9-11.
124. New Zealand. Laws, statutes, etc. *Technicians Training Act 1967*. Wellington, Government Printer, 1967. 19 p. (No. 161, 24 November 1967).
- An Act to regulate the training of technicians, their conditions of employment, and the setting up of councils for the purpose.
125. Nowe przepisy o nauce rzemiosla [New regulations for the teaching of trade subjects]. *Szkola zawodowa* (Warszawa), no. 1, 1972, p. 16-19.
- For the 88 recognized artisan trades a duration of training ranging from two to three and a half years is specified, to be halved if learning a second trade. Minimum age of 15 years, and maximum hours of work, under 16, to be 36 weekly. Practical training to be laid down jointly by the Ministry of Education and the Small Industries Committee and theoretical instruction to be as for vocational schools. Qualifications of trainers are specified.

126. Pavlovic, M.; Stamenkovic, V. *Zakon o srenjem obrazovanja sa komentarom i objasnjenjima* [The Secondary Education Act with commentary and explanation]. Beograd, Zavod za izdavanje udzbenika, Socijalisticke Replublike Srbije, 1967. 142 p.

Refers to secondary education in Serbia both in school and in industry.

127. Piperkov, S. Misli za mjestoto i hapaktepa na učebnite zavedenija za podgotovka na izpělnitelski kadri i sredni tehničeski kadri pri reformata na narodnoto obrazovanie [Consideration on the place and character of courses of training and study for operative cadres and middle-level technicians in the pattern of educational reform]. *Prof. obrazovanie* (Sofia), vol. 18, no. 7, 1970, p. 3-6.

This article presents a summary of ideas and conditions regarding liaison between the general (polytechnical) schools and those preparing (a) skilled workers (b) middle technicians. The writer considers that a transition is necessary. The schools for technicians should offer a programme which follows on from a widely based vocational school and goes further into advanced studies. In such manner the various types of establishments are linked together and become steps in the system as a whole. An appendix gives further details.

128. Poland. Laws, statutes, etc. *Zarządzenie Ministra Oświaty i Szkolnictwa Wyzszego w sprawie statutu technikum dla przodiyacych robotnikow* [Decree of the Ministry of Education and Academic Studies on the status of technical colleges set up specifically for outstanding workers]. *Dziennik Urzędowy Ministerstwa Oświaty i Szkolnictwa Wyzszego* (Warszawa), no. B - 12,15 September 1971, p. 234-239.

The substance of the decree is to give workers who have distinguished themselves both professionally and in moral character the opportunity to complete their secondary level education. This, it is intended, will provide staff capable of discharging managerial functions with success. The entrants must be not more than 40 years of age, must have practised a trade for ten years, and be prepared to follow the course extending over two years.

129. Praderie, M. La formation professionnelle des femmes. *L'Enseignement technique* (Paris), n° 54, avril-juin 1967, p. 71-98.

An article which, estimating that 35 per cent of the non-agricultural working population are women and that the percentage at work rises with higher standards of general and vocational training, surveys the socio-demographic structure in this respect and in regard to the patterns of change in recent years. Public and private forms of education and training for women, and examination statistics are set out and discussed.

130. Ranaivoarivony, G. de P. *Pattern of vocational training planning and organisation in Chad, Gabon, Malagasy Republic and Togo*. Geneva, International Labour Office, 1967. 78 p. (TMVT/1967/111)

A study of vocational training: planning methods and techniques; trends in organization of systems and obstacles to development. The study outlines methods of planning, general and vocational fields, the techniques of organizing vocational training, positive and negative aspects.

131. Razvitie na sistemata za podgotovka na rabotničeski kadri [Development of the system of training workers]. *Narodna prosveta* (Sofia), 1972, p. 382.

Summary of material from the international seminar held at Primorsko, Bulgaria, from 6 to 8 October 1971. There were three main groups: the scientific/technical revolution and consequences for the training of workers; the development of the system for the training of workers; the development of the system for the training of workers and their personality; forms and methods of vocational training. Contributions and questions dealt with the improvement of the system for training highly skilled workers.

132. Regional Conference of Ministers of Education and those responsible for Economic Planning in Asia, Singapore, 1971. *Final report*. Paris, Unesco, 1971. 91 p. (ED/MD/20) [Also published in French]

This report relates to the development of education in the countries of Asia; to the targets being set both in qualitative and quantitative terms; to educational planning as a component part of manpower needs and forecasts; to education in scientific and technical fields; and to rural education.

133. Reverdy, J.C. La formation des cadres moyens en Afrique francophone. *Genève-Afrique* (Genève), vol. 8, n° 2, 1969, p. 3-17.

Statement made to the Congress on International Affairs held at Laval University, Quebec, 6-9 March 1969.

134. Robinson, E. *The New polytechnics: a radical policy for higher education*. London, Cornmarket Press, 1968. 200 p.

135. Samamé, B. Manpower problems and policies in Peru. *International labour review* (Geneva), vol. 93, no. 2, February 1966, p. 127-142.

Article on the problems inter-relating manpower and vocational training in Peru.

136. Een school voor hoger economisch en administratief onderwijs in Amsterdam [A school for higher business and administrative education in Amsterdam]. *De Onderneming* ('s-Gravenhage), vol. 16, no. 26, December 1966, p. 824-825.

An article on the first of a new type of school of senior secondary level giving education and training for employees in industrial and commercial firms. The course, syllabuses, periods of business practice, use of part-time staff are described.

137. Selby-Smith, C. *The costs of further education: a British analysis*. Oxford, Pergamon Press, 1970. 202 p.

The unit costs of various types of courses of study are analysed and compared and the general distribution of funds in the further education sector is studied.

138. Senegal. Laws, statutes, etc. Décret n° 71-1135 du 18 octobre 1971 relative aux attributions du Ministère de l'enseignement technique et de la formation professionnelle. *Journal officiel de la République du Sénégal* (Dakar), vol. 116, n° 4192, 30 octobre 1971, p. 1124-1126.

Decree concerning the powers and functions of the Minister for Technical Education and Vocational Training. His responsibilities include: educational and vocational guidance, occupational information and initiation, technical education and training, further training. The structure of the department and its administration are outlined.

139. Sevin, G. Les problèmes posés par la formation professionnelle des jeunes ruraux à Madagascar. *Tiers-Monde* (Paris), vol. 11, n° 41, janvier-mars 1970, p. 129-148.

140. Sobieszczuk, Witold. Kształcenie zawodowe dziewcząt [Vocational training for girls]. *Szkola zawodowa* (Warszawa), no. 11, 1966, p. 11-14.

This article deals with research on the aptitudes of girls in relation to vocational training and on maintaining a better balance between the numbers of boys and girls in this field.

141. Sosnowski, T. Geneza zasadniczych szkół zawodowych dla młodzieży pracującej w Polsce [Origin of non-full secondary vocational schools for working adolescents in Poland]. *Szkola zawodowa* (Warszawa), no. 3 1970, p. 10-14.

A valuable contribution to the history of education in Central Europe. The legal

foundations of complementary vocational schooling were established in Poland in 1937. Considerable changes were introduced in order to adjust the school system to the present economic social and political conditions. Most important was the preparation of the curriculum in such a way that it would form a continuation of the compulsory eight-year primary school. The author discusses in detail the development of schools supervised by industrial plants, and the unification problems following the World War.

142. South-East Asian Regional Seminar, Bangkok, 1967. *Manpower development and educational planning: final report*. Bangkok, South-East Asian Ministers of Education Secretariat, 1967. 189 p., figs., illus.

Report of a meeting held to examine problems of manpower and educational planning in South-East Asia, particularly for rural areas. It covers the role of youth and women, community development, pre-vocational training, etc., and includes country reports from Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, and the Republics of Vietnam, China and Korea.

143. Spain. Laws, statutes, etc., Decreto 147/1971 28 enero por el que se reorganiza el Ministerio de Educación y Ciencia [Decree 147/1971 28 January on the reorganization of the Ministry of Education and Science]. *Boletín Oficial del Estado* (Madrid), vol. 311, no. 31, 5 febrero 1971, p. 1840-1844.

The basic law on education and its financing re-structures education and this in turn necessitated a corresponding reorganization of the Ministry of Education. A separate department of vocational training is set up outside the school system to be responsible, through a co-ordinating committee, for: promoting education outside the school proper; developing vocational training; developing adult education; co-ordinating the work of the Ministry of Education and other agencies in the field of vocational training and lifelong education; maintaining relation with the trends and requirements of employment.

144. Sudan. Ministry of Education. *Al-khittah al-khumasiyyah liltanmiyah al-tarbawiyyah, 1969-70 to 1973-74* [A revised outline of educational planning for the period 1969-70 to 1973-74].

Includes budget estimates, compulsory education, secondary and technical education, adult education and teacher training, literacy campaign, building, and statistics.

145. Sundram, S.T. *Educational planning in a strategy for human resources—development in West Malaysia*. Williamstown, Mass., Center for Development Economics, Williams College, 1967 63 L., figs.

Thesis on educational and manpower planning in West Malaysia for the period 1966-70; includes proposals for methodology, assessment of economic implications of forecasts of manpower needs, examines the general education system and makes recommendations for the financing of educational facilities and training centres and improvement of secondary education.

146. Sweden. Ecklesiastikdepartementet. Yrkesutbildningsberedningen. *Yrkesutbildningen* [Vocational training]. Stockholm, Statens Offentliga Utredningar, 1966. 586 p.

This report of the Committee on Vocational Training proposes the creation of a unified comprehensive senior secondary school (*gymnasieskola*) which would include general, technical, and vocational streams.

147. Sweden. Ecklesiastikdepartementet. *Betänkande med vissa beräkningar rörande kostnaderna för gymnasial yrkesutbildning enligt Yrkesberedningens, YB, förslag* [Vocational training in the upper secondary school, costs and estimates]. Stockholm, Nordiska bokhandeln, 1968. 112 p. (Statens offentliga utredningar, 1968:2)

148. Sweden. *Yrkesutbildning och arbetsliv* [Vocational training and the world of work]. Stockholm, Statens offentliga utredningar, 1970, 103 p. [Utbildningsdepartementet 1970: 58 (YB VIII)]

Final report of the Commission on Vocational Training. Vocational councils are to be set up both regionally and locally, vocational school inspection is to be reorganized, and the Institute for Training Vocational Teachers is called upon to play a major role in co-ordinating public and private efforts.

149. Switzerland. Office Fédéral de l'Industrie, des Arts et Métiers et du Travail. *Directives concernant l'institution et l'organisation des écoles professionnelles supérieures ainsi que leur subventionnement par la Confédération*. Berne, 1970. 7 p.

The purpose of these directives is to create a more advanced vocational school for the more gifted apprentices.

150. Technical education for developing countries. *Technical education and industrial training* (London), vol. 8, no. 12, December 1966, p. 554-555.

This article discusses the position of technical studies and occupations in the developing countries, the low status accorded, the imbalance in vocational education planning, the division between schools and industry of responsibility for training, and the need for commercial education and training. Few countries in Asia or Africa have yet reached a satisfactory position in this respect, or given the skilled worker the pay and status which encourage the acquisition of useful skills. Technical schools get the 'left-overs', it is feared, and commercial education has been neglected.

151. Thailand. Board for Vocational Training and Skill Promotion. *Report on the development of skilled manpower in Thailand*. Bangkok, Department of Labour, 1968. 51 L., figs.

Report on educational planning in respect of vocational training in Thailand for purposes of manpower planning. It covers apprenticeships and training centres, commercial education, rural development centres, teacher training, the role of ILO in providing technical assistance, and includes a comparative study of training activities in other countries.

152. Unesco. *Access of girls and women to technical and vocational education*. New York, UN - Economic and Social Council, 1968. 190 p. [Commission on the status of women, 21st session (Doc. E/CN 6/498)]

Report on the access of women and girls to this phase of education; the economic and legal aspects, enrolment figures, distribution by kind of activity, and conclusions. A remark is added that there is a lack of adequate guidance services in this field.

153. Unesco-IBE. *Educational trends in 1970: an international survey*. Paris, Geneva, 1970. 61 p., figs.

154. United Arab Republic. Ministry of Education. *Education in the United Arab Republic: its structure, orientation and the role of commercial studies*. Al-Qahirah, Markaz al Wathaiq wal-bouhouth attarbawiyah, 1968.

155. United Kingdom. Department of Education and Science. *A plan for polytechnics and other colleges*. London, HMSO, 1966. 11 p.

A Government White Paper setting out proposals for the development of polytechnics throughout England and Wales. These will complement the universities, granting degrees of the Council for National Academic Awards, or other qualifications, and thus provide a 'binary system'. Such degree courses are intended to be materially different in character (for example, sandwich attendance is possible) to those traditionally available in the older universities.

156. United Nations. *Report of the regional conference on education, vocational training and work opportunities for girls and women in African countries*. New York, United Nations, 1971. 71 p. (UN-E/CN.14/SW)

Report of a conference held in Rabat, sponsored by the German Foundation for Developing Countries and the Economic Commission for Africa (ECA) with the object of improving women's access to education and training and subsequent employment, of eliminating or reducing factors limiting full involvement in national life, and of quickening their contribution to the economic and social life of the country. Recommendations included: development of special and planned education and training programmes which meet the needs of girls and women; free and compulsory education for both sexes; programmes adapted to their needs, and women to serve on advisory and policy making committees; establishment of an African Council for defining the role of women in such matters.

157. U.S. Advisory Council on Vocational Education. *Notes and working papers concerning the administration of programmes authorized under the Vocational Education Act 1963*. Washington D.C., U.S. Government Printing Office, 1968. 442 p.

The main statement of this report is that some form of post-secondary occupational preparation should be universal in the near future, and that 25 per cent of funds have been earmarked for this purpose.

158. United States. Laws, statutes, etc. *Act to amend the Vocational Education Act 1963*. Washington D.C., 1968. 35 p. [Public Law 90-576 90th Congress H.R. 18366]

Seeking to expand as well as strengthen and improve vocational education, this Act deals with Federal grants, national and state advisory councils, research, curriculum development, special programmes, and application of the Act.

159. Urquidi, V.L.; Lajous, A. *Educación superior, ciencia y tecnología en el desarrollo económico de México—un estudio preliminar* [Higher education, science and technology in the development of Mexico—a preliminary study]. Mexico, D.F., Colegio de México, Centro de Estudios Económicos y Demográficos, 1967. 86 p., figs., bibl.

A brief study of input/output aspects of higher and technical education and of their role in national development.

160. Vaizey, J.; Chesswas, J.D. *The costing of educational plans*. Paris, Unesco, International Institute for Educational Planning 1967, 64 p.

A booklet outlining the principles and importance of costing in connexion with educational plans, showing the kind of items involved, the variables and periods of accounting, costing problems, and describing the procedures and methods used in a developing country.

161. Wolczyk, J. *Planowanie oświaty* [Educational Planning] Warszawa. Państwowe Wydawnictwo Naukowe, 1968. 272 p.

An examination of the problem of educational planning in a large urban centre; the relationship of general education to technical and vocational forms.

162. World Federation of Trade Unions (WFTU). *Vocational training: more than a concern—a necessity*. Prague, 1966. 131 p.

The proceedings of the 1968 World Trades Union Conference on Vocational Training: the opening address, motions and conclusion. Charter on vocational training.

163. Yugoslavia. Laws, statutes, etc. *Zakon o srednjem obrazovanju* [The Law on secondary education]. *Prosvetni glasnik* (Beograd), no. 6, 7 & 8, 1967, p. 155-157.

This Law on Secondary Education, adopted by the Assembly of the Socialist Republic of Serbia on 19 April 1967, defines the enrolment of secondary schools, which represent general preparation for work so that the graduates can directly find employment or continue their education. The Law also deals with the administration of secondary education as regards details of school, staff, and pupils. Similar laws, each having special characteristics appropriate to the autonomous provinces, were enacted by Croatia (16 July 1971), Bosnia and Hercegovina (March 1971) and Macedonia (29 September 1970).

164. Zambia. *Report of the Working Party appointed to prepare detailed plans for the implementation of the Saunders Report on technical and vocational education and training*. Lusaka, Cabinet Office, 1968. 33 p.

The report sets out a new national scheme for technical and vocational education and training and makes recommendations for its implementation: expansion of facilities at the secondary level, and pre-vocational induction courses.

165. Zambia. Laws, statutes, etc. *Technical Education and Vocational Training Act 1970*. *Government gazette* (Lusaka), Supplement 27 October 1970, p. 761-780. Act no. 56 of 1970.

The Act is designed to promote and improve the services and facilities available to technical education and vocational training. It defines the membership and function of administrative and advisory bodies; makes financial provisions; stipulates the registration of private institutions, inspections, etc. A Commission for Technical Education and Vocational Training and an advisory board are set up, and the creation is envisaged of a post of director of technical education and vocational training, to be responsible to the Minister.

III. Organizational aspects

166. Adegas, M.H. *Análise do aumento de salários resultante de formação profissional adquirida nos 20 cursos de F.P.A. terminados no centro no. 1* [Analysis of salary increases resulting from vocational training given in 20 courses of adult training completed in Centre no. 1] *Boletim bimestral do Fundo de Desenvolvimento da Mão-de-obra* (Lisboa), no. 23-24 4 Suppl. enero 1969, p. 3-40, 47-48, figs.

A report on the effect of vocational training on wages of workers in Portugal. The analysis covers the period February 1966 to March 1967 and deals with workers in the special training programmes cited.

167. Al-Bukhari, N.M.A. *Issues in occupational education and training: a case study in Jordan*. Stanford, California, Stanford International Development and Education Center (SIDEC), 1968. 183 p.

This report outlines research carried out to examine and assess the alternative types of education and training by which industrial skills may be acquired. The function of UNRWA vocational training centres is mentioned. The system of education in Jordan is described, and the report contains suggestions for reform especially in the facilities for vocational training.

168. Algeria. Centre de coordination des instituts de technologie. *Les Instituts de technologie—Bilan d'une année de fonctionnement*. Alger, 1971. 178 p.

Describes the objectives and the difficulties encountered, problems of employment, the conflict between academic and social requirements.

169. Avigad, M. *Ha-hinukh ha-mikzo' i-tekhni: tikhnuno be-het'em le-zorkhey ha-meshek ve-ha-hevra* [Vocational-technical education; its planning in accordance with the needs of the market and society]. Jerusalem, Ministry of Education and Culture, 1971. 17 p.

Set of proposals designed to extend and improve vocational and technical education in Israel, which includes 280 institutes, public and private. The intake to such schools would be increased from 44 per cent (55,000) to 50 per cent of all high school students. Vocational high schools would offer three programmes:

- (a) high-level technical-vocational leading to the technician's matriculation;
- (b) middle-level vocational giving 'technician' or 'practical engineer' status;
- (c) low-level course awarding a certificate of completion. Ties with industry would be strengthened. Teachers' qualifications would be improved, and in-service courses of training provided. The curriculum would be revised and improved teaching methods and aids introduced. Finally, enrolment in the technical branch would be encouraged by introducing a technical line in the newly formed middle schools. Some existing institutions not fitting into this scheme would be discontinued.

170. Bartsch, W.H. The Industrial labour force of Iran; problems of recruitment, training and productivity. *Middle East journal* (Washington), vol. 25, no. 1, Winter 1971, p. 15-30.

Article on problems associated with the recruitment, vocational training and labour productivity of industrial workers in manufacturing industry in Iran, stressing the need to improve vocational training programmes at secondary level, and those for management development, and to up-grade the wages and occupational qualifications of skilled workers.

171. Batysev, S. Novoe sodержanie professional'no — tehničeskogo obrazovanija [New vocational and technical training programmes]. *Narodnoe obrazovanie* (Moskva), nr. 7, 1971, p. 10-14.

This article deals with the training of skilled manpower in vocational schools which combine such training with general secondary education. There are to be new training programmes for the future based on related groups of occupations. It is thought that better results can be obtained by combining the two themes than by teaching them separately. On the other hand, efforts 'to teach a trade' in schools of general education are very often a failure. The training of the skilled worker is to be considered as divisible into three stages: basic training, with multi-purpose (polyvalent) aims; specialization to accord with the requirements of the job; further training for workers in vocational evening classes or in the industry. A Scientific Council, set up in 1968 by the Academy of Sciences and Education, is to co-ordinate and direct research on training.

172. Bennett, Y.R. The range of goals and objectives in industrial training and further education. *Vocational aspect* (Oxford), vol. 21, no. 50, 1969, p. 113-118.

173. Binder, R. K problemom perspektiv vyvoja strdných odborných škôl [The problem of developing technical secondary schools]. *Jednotná škola* (Bratislava), vol. 22, no. 8, 1970, p. 685-696.

This article deals with courses for technicians in secondary schools and with the reform of such training programmes. The onset of specialization has increased the need and value of some common factor such as a problem-solving approach, or a knowledge of methods in other countries.

174. Bogdavič, N. Dualizam u srednjem obrazovanju [Dualism in secondary education]. *Prosvetni pregled* (Beograd), no. 11, 1971, p. 1.

In discussion during the third annual convention of the Association of Vocational Schools of the Metals Trade of Serbia it was stated that the administrative equalization of schools for young workers with schools which prepare their students for more intellectual work is in itself not sufficient if there are no simultaneous revisions of curricula and syllabuses in the vocational schools, if teacher qualification requirements are not raised and if student enrolment in the future continues to be carried out on the basis of social origin and financial situation of the family. The Convention passed several proposals in changes which should be introduced into the Law on Secondary Education so that students of the schools for skilled workers could achieve parity with their counterparts at other secondary schools. Among changes proposed were: reduction of the class load to 32 hours per week to allow more leisure time in vocational schools; the republican bodies to prescribe general syllabus matter only, leaving the schools free to do the same for vocational content; schools to determine their own school year; consideration should be given to possibilities for more specialized education which would enhance secondary school leavers' chances of finding employment in production.

175. Brazil. Serviço Nacional de Aprendizagem Comercial (SENAC). *Destino profissional de ex-alunos do SENAC* [Career prospects for graduates of SENAC courses]. Rio de Janeiro, 1968. 117 p.

This enquiry examines and assesses the positions and career prospects of young people and of some of more mature age who had graduated from SENAC commercial secondary schools in three successive years. Of the total of nearly 500, 56 per cent were male, and 76 per cent under 25; 87 per cent had found the training useful, and 59 per cent were still studying whilst working.

176. Burgess, Helen. High school drop-ins. *North* (Ottawa, Ont.) vol. 13, no. 3, September/October 1966, p. 12-15.

Article on training programmes for apprentices and other young people in the North-West Territories of Canada. They will spend six weeks in each year at a residential school in the South, all costs paid.

178. Burns, G. *African education—an introductory survey of education in Commonwealth countries*. London, Oxford University Press, 1965. 215 p.

An attempt to define the emerging educational pattern and system in Africa, and the social determinants of education. The whole educational spectrum is covered—primary, secondary, further, and university; teacher training, and administration. Chapter 4 deals specifically with further education, including agricultural, and adult forms. There is a considered plea that vocational education in particular should be designed with greater variation in response to local conditions.

179. Cielplak, L. O koncepcie pomaturalnej szkoły zawodowej [Notions on the nature of post-secondary vocational schools]. *Oświata dorosłych* (Warszawa), vol. 13, no. 4, 1969, p. 228-234.

Pupils holding the leaving certificates of general secondary schools are given occupational training, and the method of doing this is discussed.

180. Colombo Plan. *Colloquium on intra-regional technician training*. Colombo, Colombo Plan Bureau, 1971. 180 p.

The account of a conference held to discuss regional technician training problems. Among the themes discussed were: national planning of technician education; administration of such a programme; migration of technicians and others. Measures recommen-

ded to raise the status of technician education were: seminars to explain and display the benefits of such training; improved status, salaries, etc. for technicians; better vocational counselling in this respect in schools; greater involvement by industry.

181. Colombo Plan. Seminar on approaches to co-operation between industries and institutions in technical training. Bangkok, 1965. *Summary record of proceedings*. Colombo, Colombo Plan Bureau, 1965. XVII, 90 p., figs.

Conference report on approaches to co-operation between industry and technical education and training centres in Thailand. It covers training programmes and includes suggestions in respect of in-plant training and apprentice training methods.

182. Conference on Education and Scientific and Technical Training in Relation to Developments in Africa, Nairobi, 1968. *Final report*. Paris, Unesco, Organization of African Unity, 1968. 73 p. (ED/CS/125/21) [Also published in French]

This report on educational developments in Africa concludes that greater attention should be paid to technical and scientific matters at the secondary level; training in scientific and technical fields, especially for agriculture, should receive high priority; educational planning should relate to the economics of growth; teacher training, and a network of colleges to prepare technical teachers, should be developed.

183. Conseil national du patronat français. *L'appréciation des résultats dans l'éducation professionnelle—sa place dans le système des relations entre l'école et la profession*. Paris, mai 1969. 18 p.

Rethinking of examination and evaluation schemes following the student disturbances of 1968 led to the adoption of a new scheme reducing the weight placed on the final examination, its content and importance, and giving more attention to continuous assessment as a system of evaluation. The record kept by the school and its function in this respect will need critical re-appraisal, particularly in the fields of technical and vocational education.

184. Contreras, E. La adecuación educación-ocupación—un estudio sobre la educación técnica mecánica a nivel medio en el distrito federal [The balance education/occupation—a study of technical education (mechanical) at secondary level in the Federal district]. *Revista mexicana de sociología* (Mexico), vol. 31, no. 1, enero/marzo 1969, p. 93-107.

Evaluation of vocational training at secondary education level in Mexico, with reference to the manpower needs of manufacturing industry. Survey of the occupational qualifications of technicians and skilled workers, noting the disparity between training programme content and job requirements.

185. *La Co-opération entre la France, l'Afrique noire d'expression française et Madagascar*. Paris, La documentation française, 1966, 47 p. (Notes et études documentaires, n° 3330).

A booklet concerning French technical assistance to these countries, which critically re-examines their needs and how to fulfil them. 'It is doubtful whether the traditional and rigid divisions between primary, secondary, technical and vocational, and higher education really meet the needs of African countries.'

186. Corpet, Y. Les professions et les examens. *Revue française de pédagogie* (Paris), n° 2, janvier 1968, p. 26-29.

Article describing from the employers' point of view the weaknesses in the present examination system for testing occupational competence.

187. Cuba. Ministerio de Educación. *La enseñanza técnica y profesional* [Technical and vocational education]. La Habana, Instituto del libro, 1968. 150 p., annexes, illus.

This book gives a comprehensive account of the whole field of technical education in Cuba with the intention of enabling teachers in the basic secondary schools to advise their pupils. As well as a description of the system, the schools and colleges and their functions, there is much information as to possible careers, scholarships etc. It includes a section on teaching, and teacher training, and one of the four appendices presents in full the national system of education.

188. Čukić, R. *Privreda kroji nastavne programe* [The economy dictates teaching programmes]. *Politika* (Beograd), vol. 67, no. 7 1970, p. 6.

The experience gained by the Technical School Centre at Bor is ample evidence that vocational schools are no longer dissociated from the economy and its requirements, that they are no longer left at the mercy of subsidies, and that they no longer plan personnel or create programmes all by themselves. Today this Centre has 1,500 pupils in Bor and 150 more each in Negotin and Majdanpek. Every year the Centre trains 400 young skilled workers who have no problems in finding jobs because their training is adjusted to the demands of enterprises and their changing production organization and technology. This co-operation between economic enterprises and the schools has greatly changed the teaching programmes of the Bor schools. So far the Centre has trained at least 2,500 skilled workers or technicians, while 3,000 other workers received adult vocational training.

189. Dabrowski, Z. *Szansa wychowania technicznego* [Chances for technical education]. *Nova szkola* (Warszawa), no. 1, 1969, p. 4-9.

The technical education programme in high schools is to give basic elements of modern technology. Students are to learn and understand such main factors in the modern productive process as technical designing, organization of productive work, scientific basis of technology and social value of technological activity. Aims thus conceived have a great character-building value and, combined with mathematics and natural sciences, help to integrate students' knowledge.

190. Davies, G.M. *Engineering education and training*. Blagdon, Somerset, Staff College, 1970. 39 p. (Reports vol. 2, no. 17)

This report is concerned with the vocational training of industrial craft apprentices more particularly in 'integrated courses' provided by technical colleges, carrying out both theoretical and practical work.

191. Dieuzeide, H. *Educational technology and the development of education*. Paris, Unesco, 1970. 23 p. (International Education Year. Special Unit, no. 8)

A paper on the problems associated with the development of educational technology and in relation to developing countries. Educational functions now need to be analysed to determine those features which the teacher can cover more successfully than the machine. A linguistic distinction is called for between technology in education, meaning the use of teaching equipment, and technology of education, meaning the application to education of scientific knowledge and principles.

192. Dobosiewicz, S. *Reforma szkół średnich dla absolwentów ZSZ i SPR* [Reform of the secondary school for ZSZ and SPR leavers]. *Szkola zawodowa* (Warszawa), no. 4, 1968, p. 3-9.

An article on the value of continued secondary education for skilled workers and the need to design a system to this end.

(ZSZ = basic skilled workers' schools; SPR = basic agricultural schools)

193. Donald, A. Industrial and commercial studies in Iceland. *Technical journal* (London), vol. 8, no. 3, 1970, p. 13-15., illus.

Article on vocational training, commercial education and higher education facilities in Iceland, covering admission requirements, training programmes, etc.

194. Edstrom, K. Yrkesutbildning anpassad till skolan eller arbetslivet? [Is vocational training conditioned by school or industry?]. *Yrkesutbildning* (Stockholm) no. 4, 1969, p. 27-28.

This article asks whether the schools can keep up with the rapid changes in techniques without causing some deterioration in educational values.

195. Evans, G. Social and educational backgrounds of students at a college of technology. *Vocational aspect* (Oxford), vol. 21, no. 50, 1969, p. 135-141.

196. Fedrizzi, R. *Indagine sul riordinamento della istruzione professionale e dell'apprendistato* [Enquiry into the reorganization of vocational education and apprenticeship]. Roma, Unione italiana delle camere di commercio industria e agricoltura, 1965. 87 p.

197. Formation continue: un nouvel essor. *L'Education* (Paris), n° 81, 12 novembre 1970, p. III & IV.

A new impetus is to be given to continuous training by a system of 'credits' on which examinations may be passed in modules gained successively at various times.

198. France. Laws, statutes, etc. Décret n° 68-639, 9.7.1968. *Journal officiel de la République française*.

This ordinance adds amendments to the basic Act of 6 January 1959 and defines the new certificate to be given upon completion of two years' school-based vocational training, namely the BEP (*Brevet de l'enseignement professionnel*). The CAP (*Certificat d'aptitude professionnelle*) will continue to be awarded to apprentices and others trained in industry with part-time attendance at classes.

199. Frommer, H. Technisch orientierter erster Bildungsweg? [Technically oriented basic education?] *Die berufsbildende Schule* (Wolfenbüttel), Bd. 23, Nr. 10, Oktober 1971, p. 700-711.

Such a technically oriented line of basic education within the lower secondary phase would enable all to be contained within the *Gesamtschule* (comprehensive school), thus ensuring equivalence between the old and the new streams. A basic vocational training could be given in the two final years of the junior secondary cycle in the full-time *Berufsfachschule*, leading to the leaving certificate namely Abitur I. In the third year it would be possible to gain the *Facharbeiterbrief* (skilled worker certificate).

200. Furtado, J.A. *Coordinación entre la formación profesional y la enseñanza media* [Co-ordination of vocational training and secondary education]. Montevideo, Centro Interamericano de Investigación sobre Formación Profesional. (CINTERFOR Informes no. 28)

A paper on the need to combine vocational training with secondary education and on the right to a basic education and to the opportunity of lifelong training, including the furtherance of women's education, and suggestions for structural reform of the system. Opposing any rigorous division between general and vocational education as this would prevent the supply of a mobile labour force, it recommends raising the school-leaving age to 14, and offering three-year courses of higher education at universities and technical colleges.

201. Gleazer, E.J. Jr. Technical education and society. *School shop* (Ann Arbor, Mich.), vol. 26, no. 10, June 1967, p. 32-33, 45.

An article on community colleges, considering the low prestige attached to technical and vocational studies and advancing proposals for changing this appraisal, with benefit, it is suggested, to the less privileged families.

202. Godlewski, M. Główne kierunki rozwoju kształcenia zawodowego—tendencje, problemy [Main tendencies and problems of the development of vocational education]. *Szkola zawodowa* (Warszawa), no. 3, 1967, p. 33-36.

Discussing main developmental aspects of the Polish programme of vocational education as defined in national development plans, the author compares the situation in Poland with that in other socialist countries, as regards such problems as the nomenclature of vocations, the vocational schools reform and the application of cybernetics and psychology in the research on vocational education.

203. Grbić, D.; Bila, Marija. Analiza organizacije i rada školskih centara u SAP Vojvodini [Analysis of the organization and work of school centres in the autonomous region of Vojvodina]. *Savremeno obrazovanje* (Novi Sad), no. 3-4, 1970, p. 179-204.

When, in March 1966, the Education-Cultural Council of the Vojvodina Assembly made their recommendation concerning school centres of vocational education in Vojvodina, these school centres had already proved to be a satisfactory form of vocational education and a new and rational educational institution. The Federal Assembly, 1960, had designed the school centre as an educational institution which would 'prepare personnel for higher levels of vocational education in determined economic activities or in public service' and many such centres were established throughout the country. In Vojvodina today there are 31 of them, consisting of 84 schools with 24,129 students. This article is an analysis of their organization.

204. Grignon, C. *L'Ordre des choses, les fonctions sociales de l'enseignement technique*. Paris, Editions de minuit, 1971. 365 p., index.

205. Grüner, G. *Die gewerblich-technischen Berufsfachschulen in der Bundesrepublik Deutschland* [The full-time industrial vocational schools of the Federal Republic of Germany]. Weinheim, Berlin, Verlag Julius Beltz, 1968. Studien zur Arbeits- und Berufspädagogik, Band 4 (Hsgbr: Deutsches Institut für internationale Pädagogische Forschung). 346 p.

This book is the result of a survey made by the German Institute for International Educational Research at the request of the Federal Ministry of Economic Affairs in order to assess the standard of training, theoretical and practical, in the vocational schools for industry and to compare this standard with that attained through training given in firms. The survey set out to determine how far training in the vocational schools might justify limitation of the apprenticeship system, and the role of such schools after recent legislation on vocational training. The data, referring to the year 1967, concerned 411 schools with a total of 24,184 pupils. Replies received from firms and from the German Council for Industry and Commerce are summarized. The work includes a detailed description of industrial vocational schools in the various Länder.

206. Guillebeau, C. L'Education permanente dans le cadre des liaisons université-entreprise. *Formation continue* (Paris), n° 2, 1968, p. 7-17.

The text is the first part of the inaugural lecture by M. Charles-Pierre Guillebeau as professor of socio-economic problems at the Conservatoire National des Arts et Métiers, Paris. He stresses the importance of career planning, close liaison between university and enterprise, and the creation of a new pedagogy for training men of action.



207. Hart, M.G. Travelling teaching units in the land and down under. *School shop* (Ann Arbor, Mich.), vol. 26, no. 6, February 1967, p. 46-47.

An article describing the use of mobile training units for the provision of vocational training in the more remote areas of Australia. The Department of Technical Education in New South Wales has solved the problem by the use of a 'unit' composed of three railway carriages—one for administration, one as a lecture room and one as a workshop—which remains in a town for two weeks. The courses given are all part-time. It is estimated that the training has had the effect of retaining many young people in their home areas who would otherwise have left.

208. Henrysson, S.; Asemar, C.G. Rekrytering till fackskola och gymnasium [Recruiting to the technical school and the upper secondary school]. *Statens offentliga utredningar* (Stockholm), vol. 20, 1970, p. 155-179.

209. Hermann, G. Examination systems in technical education. *The Australian technical teacher* (Melbourne), vol. 1, no. 1, June 1969, p. 29-35.

Article on the assessment of performance in vocational education and the need for agreed standards.

210. Hoffmann, R. Der polytechnische Lehrgang und die Berufsschule [Polytechnical education in the vocational school]. *Arbeit und Wirtschaft* (Wien), Bd. 23, Nr. 6, Juni 1969, p. 26-28.

Critical examination of the organization of 'polytechnical' classes in the final stage of compulsory education in Austria, and comparison with Holland, Sweden and the German Democratic Republic.

211. Honduras. Laws, statutes, etc. Ley orgánica de educación [Act on the structure of education]. *La Gaceta* (Tegucigalpa), vol. 92, no. 19, 3 enero 1967, p. 1-6.

The Act organizes national education in Honduras at all levels and its administrative structure. The pattern consists of three years' pre-primary education, six years' primary and two stages of secondary, comprising respectively three years and at least two, and including technical and vocational programmes.

212. Houghton, H.L. The training aspect of sandwich courses. *Technical education and industrial training* (London), vol. 8, no. 4, April 1966, p. 167-171.

Article on the problems of arranging satisfactory practical training in connexion with sandwich courses in colleges.

213. India. Ministry of Education and Social Welfare. *Report of the Special Committee on Reorganisation and Development of Polytechnic Education in India*, 70-71. New Delhi, 1971. 245 p.

This comprehensive report, whilst directly concerned only with the problems of technician education and training in India, is clearly of interest to other countries at similar stages of development in their several industries. In 14 chapters it covers: a review of polytechnic education; concept of the technician; survey of industry; reorganization of polytechnic education; staff, students and assessment; training and employment; partnership with industry and commerce; status of the technician; administration and finance; action and recommendations. The latter recommendations start from the idea that 'Polytechnic education should be co-ordinated with the state of industrial and commercial development and the economic resources of the country as a whole'. Teacher training is considered, the problems of rural areas, also guidance and counselling. Training for immediate employment and the improvement of this aspect is given high importance.

214. Institute of Public Administration, Dublin. ANCO, The Industrial Training Authority. *Administration* (Dublin), vol. 18, no. 1, Spring 1970, p. 1-58. figs.

Compilation of articles on the establishment and vocational training functions of the Industrial Training Authority (ANCO) in Ireland, covering administrative aspects, training programme design, re-training, further training, and management development facilities.

215. Instytut Pedagogiki, Warszawa. *Kształcenie zawodowe* [Vocational Training]. Warszawa, Państwowe Wydawnictwo Szkolnictwa Zawodowego, 1968. 365 p.

A report on the scientific conference on vocational training organized by the Institute of Pedagogy in 1966.

216. Jozsa, Ö. *Oktatás, szakképzés, gazdaság* [Education, vocational education, economy]. Budapest, Közgazdasági. és Jogi K. 1969. 267 p.

Differentiation in the working force as a result of technical development necessitates improved training. Re-education of those already qualified seems essential, while the duty of giving general education is closely bound up with that of providing vocational training. Correlation of different educational establishments is called for, together with a re-planning of the system from the standpoints of pupils, teachers, working conditions, objectives and finance. Suggesting several methods of augmenting the number of qualified staff, the author calls for improved methods of retraining and up-grading. It is necessary to increase the rate of progress of education.

217. Jungk, D. *Probleme des sozialen Aufstiegs berufstätiger Jugendlicher* [Social promotion of the young worker]. Stuttgart, Ferdinand Enke Verlag, 1969. 288 p.

Assessment of the extent to which the 'second path' to higher education through skilled worker and technical qualifications promotes or assists social mobility.

218. Korea (Republic of). Laws, statutes, etc. *Loi sur la mise en vigueur de l'enseignement technique obligatoire de 9 ans pour tous*. 24.11.1966. *Informations coréennes* (Pyongyang), vol. 32, no. 10, 1966, p. 1-4.

219. Krause, E. *Berufsforschung* [Occupational research]. *Die Deutsche Berufs- und Fachschule* (Wiesbaden), Bd. 62, Nr. 1, Januar 1966, p. 22-30.

Research on occupations and the attributes required as a basis for vocational training of a modern type.

220. Kwarciak, S. *Nowe programy w szkołach zawodowych w roku szkolnym 1969-70* [New syllabuses for the vocational school in 1969-70]. *Szkola zawodowa* (Warszawa), no. 7/8, 1969, p. 22-24.

From the 1969/70 school year compulsory schooling will be extended, thus raising the academic level of entry to vocational schools. This will necessitate changes in vocational and in technical schools' curricula.

221. Lahtinen, R. *Menestyminen ammatikoulussa* [Achievement in vocational schools]. Tampere, Tampereen yliopiston tutkimuslaitos, 1970. 77 p. (A-publications 33)

222. Laitinen, Oiva. *Pohjois-Karjalan ammatillisista kouluista valmistuneiden sijoittuminen työmarkkionille* [Placement in the labour market of graduates from vocational schools in North Karelia]. *Pohjois-Karjalan maakuntalitto* (Joensuu), no. 36, 1970, p. 164.

223. Laurent, P. Education et progrès. *Informations SIDA* (Lille), Supplément, n° 165, novembre 1967. 15 p.

Statement by the Secretary General of the French Ministry of Education on the positive effects on vocational education and training of recent reforms and the resulting changes. A further expansion of technician and other sub-university levels of education is foreseen.

224. Lempert, W.; Ebel, H. *Ausbildungssystem und Ausbildungserfolg* [Duration of apprenticeship, systems of training and results]. Verlag Rombach, Freiburg im Breisgau, 1965. 414 p.

This extensive survey of the apprentice training system in the Federal Republic of Germany makes a comparison, as regards system, with other countries and evaluates the different needs of particular trades in respect of duration and system.

225. March, W.A.E. The schools and industry. *Industrial training international* (London), vol. 2, no. 6, June 1967, p. 245-248.

An article describing a scheme being tried out in some senior secondary schools to encourage pupils of supposedly lower ability to enter industry. The examination standards are thought to have little relation to industrial requirements. The scheme involves the release of the pupil from school to industry for one day per week.

226. Martinoli, G. Alcune note in margine al problema dell'istruzione professionale. [Some marginal notes on the problems of vocational education]. *Censis* (Roma), vol. 3, no 40, febbraio 1967, p. 63-77.

This article considers the full-time vocational schools of Italy and makes proposals for their re-organization.

227. Metais, G. *L'avvenire della formazione professionale e tecnica nei paesi della Comunità economica europea* [Future of vocational training in the E.E.C.]. Roma, UNITESA 1969. 1st International Conference on Vocational Training in Europe, p. 37-59. Delivered to the National Association for Technical and Vocational Education (UNITESA) in Rome, 21-23 February 1969.

This paper describes the reforms in the French system of vocational training and outlines the problems that each of the member countries is facing in the co-ordination of policies concerning employment, education and training.

228. Milivojčev, B. Obezbeđivanje stručnih kadrova za novu proizvodnju [The training of skilled workers for new production]. *Naša stručna škola* (Beograd), no. 10, 1970, p. 3.

The author points out the need to devote far greater attention to the training of workers both for current activities and for medium- and long-term economic and social development plans. Emphasis is laid on the need to bear in mind, in establishing the need for new production, those dimensions which are a consequence of the continual change in work organizations through scientific innovation and the influence of the market economy and new socio-economic relations and measures. The author concludes that the training of skilled workers for new production is one of the most complex questions in the system of skilled training, perhaps even in the whole system of practical education. He distinguishes between the training of workers for building new structures and the training of workers for production.

229. Miller, A.J.; Twyman, J.P. Persistence in engineering and technical institute programs: a study of some non-intellective concomitants. *Journal of human resources* (Madison, Wisc.), vol. 11, no. 2, Spring 1967, p. 254-263.

Account of a study carried out with the object of identifying those traits of personality in engineering and technical students who are recorded as 'drop-outs'.

230. Moore, B.M. National Foundation for Educational Research in England and Wales. *Block or day-release?* London, 1969. 198 p., figs.

Findings of research conducted to ascertain the respective merits of day-release or block-release from employment to attend classes at technical colleges.

231. New South Wales, Australia. Industrial Commission. *The apprenticeship system in New South Wales*. Sydney, N.S.W., Government Printer, 1969. 638 p.

A comprehensive report on the apprentice training system in New South Wales both on the job and in vocational schools, including an assessment of its adequacy for the present demands made upon it.

232. Nitzhan, Esther. *Bet ha-sefer ha-mikzo'i, tokhnit ha-limudim ve-zorkhey ha-meshek be-anfey ha-hashmal ve-ha-elektronika* [The vocational school, curriculum and market needs in the branches of electricity and electronics]. Jerusalem, Henrietta Szold Institute, the National Institute for research in the behavioural sciences, 1968. 138 p.

233. Nowacki, T., ed. *Studia nad kształceniem zawodowym* [Studies on vocational education]. Warszawa, Państwowe Zakłady Wydawnictwa Szkolnych, 1967. 281 p.

Methodology and results of studies on vocational education by the Institute of Pedagogy in Warsaw.

234. Nowacki, T. W sprawie szkolnictwa zawodowego [Vocational education]. *Nowe drogi* (Warszawa), vol. 22, no. 10, 1968, p. 99-108.

235. Organisation for Economic Co-operation and Development. *The education, training and functions of technicians, Portugal*. Paris, 1970. 137 p., figs., bibl. [Also published in French]

A report on the structure of vocational training and technical education for technicians in Portugal. Covers training centres, training programmes, apprenticeships, curriculum, examinations, content, etc., and includes the occupational structure of technical manpower.

236. Ottwaska, D. Die Schule als Bildungsbetrieb [The school as education industry]. *Wirtschaft und Erziehung* (Wolfenbüttel), Bd. 19, Nr. 4, April 1967, p. 145-153.

A detailed suggestion that an educational institution might with benefit be organized and costed like a factory engaged in productive work. Planning, costing, research, material investment, etc. are all discussed in this light.

237. Pejovich, S. Technical progress and technical school. *Review of social economy* (Chicago, Illinois), vol. 26, no. 1, March 1968, p. 40-49.

An article assessing the relative usefulness of on-the-job training or technical school course for the re-training of workers.

238. Pendse, S.G. The vocational training and apprenticeship system in India. *Manpower Journal* (New Delhi), vol. 2, no. 2, July/September 1966, p. 62-75.

An article dealing with school-based training.

239. Porstendorfer, R. Leitungsprobleme bei der Weiterentwicklung der polytechnischen Bildung und Erziehung [Problems in the development of polytechnical education and training]. *Polytechnische Bildung und Erziehung* (Berlin), Bd. 10, Nr. 12, Dezember 1968, p. 484-486; Bd. 11, Nr. 1, Januar 1969, p. 2-6.

An article recounting the experience of the last ten years in this field.

240. Prokof'ev, M.A. *Narodnoe obrazovanie v SSSR 1917-1967* [Public education in the USSR 1917-1967]. Moskva, Izdatel'stvo Prosveshchenie, 1967. 544 p.

This book on the state of education in the USSR contains a chapter on vocational and technical education.

241. Reforma en el sistema de enseñanza técnica [Reform of the technical education national system]. *Revista de la Secretaría de Educación Pública* (Mexico, D.F.), vol. 2, febrero 1972, p. 5-12.

This article gives details of the current reforms which will develop considerably the system of technical and vocational education in Mexico. Some 43 directors of schools and colleges assembled to hear from the President of the Republic and his Secretaries of Education of the reforms to take place in the immediate future, and the objectives of these developments. These changes concern both the secondary technical and the technician levels as well as higher education. The defects of the past have been well analysed and are to be removed; the whole system is to be made as responsive as possible to modern conditions. There will be a total of 28 colleges of technology and 240 technical schools, including those specializing in sheep-farming and fishing.

242. Reguzzoni, M. Problemi della educazione professionale [Problems in vocational education]. *Aggiornamenti sociali* (Milano), vol. 20, no 2, febbraio 1969, p. 121-134.

The article considers that the present vocational schools (*istituti professionali*) cannot entirely cope with progressive demands of the future and makes some recommendations.

243. Reiner mann, W. Die Handwerkslehre in Kreuzfeuer der Sozialkritik [Craft training under cross-fire of social criticism]. Köln, Wolfgang Stratenwerth 1967. In: *Berufserziehung zwischen Tradition und Fortschritt*. 391 p.

Traditional training in the world of craftsmanship has much to commend it, but it may no longer compare with the educational, social and economic benefits to be obtained from equivalent training in vocational schools. This article points out its distinctive features and rejects much of the criticism commonly directed at such a system.

244. Reszke, Irena. Dyrektorzy szkół zawodowych o systemie rekrutacji [Directors of vocational schools on methods of recruitment]. *Szkola zawodowa* (Warszawa), no. 4, 1968, p. 18-21.

This article on the methods of selection in use for entry to vocational schools and technical colleges asks how far the necessary information on occupations and training possibilities is passed to the basic school by the technical institutions referred to.

245. Ribich, T.I. *Education and poverty*. Washington, D.C., The Brookings Institution, 1968. 163 p. (Studies in social economics)

This book considers education as a means of reducing poverty and makes some analyses of cost-benefits obtainable as the result of various programmes. One of the conclusions is that vocationally oriented education gives a better return than does general education.

246. Scionti, R. Cultura e professione, economica e scolarità [Culture and occupation, economics and schooling]. *Reforma della scuola* (Roma), vol. 12, no 11, novembre 1966, p. 20-23.

Criticizing national education policy with particular reference to the lack of any organic link between the general and technical branches, this article contains a proposal for the creation of a technical and vocational institute.

247. Simone, J.A. de *Co-ordinación entre la formación profesional y la enseñanza técnica* [Co-ordination of vocational training with technical education]. Montevideo, Centro Interamericano de Investigación y Documentación sobre Formación Profesional (CINTERFOR), 1967. 12 p.

Report of a conference to discuss the question of co-ordinating vocational training with secondary technical education, which was considered to require modification.

248. Skolöverstyrelsens förslag om mellanskolan [Proposals of the Central Board of Education concerning secondary schools]. *Aktuellt om Yrkesutbildning* (Stockholm), no. 1, 15 januari 1970, p. 2.

It is proposed to amalgamate the present three types of senior secondary schools, viz., the general secondary school (*gymnasium*), the two-year technical college (*fackskola*) and the vocational training institute (*yrkesskola*) into one comprehensive school (*mellanskola*), offering 21 basic streams or options. Options 1 to 16, in the two-year stream, would be various trades and professions; options 17 to 20, in the three-year stream, would be the present *gymnasium* courses; while the four-year stream would offer technology, as at present in the secondary stage.

249. Sommerhalder, P. Das Aarauer Modell einer Berufsmittelschule [The Aarau type of secondary vocational school]. *Journal des associations patronales* (Zürich) Bd. 63, Nr. 49, Dezember 1968, p. 948-951.

Description of an experiment in which a secondary vocational school gives related instruction facilitating access to more advanced technical education.

250. Sosnowski, T. *O kształceniu zawodowym w Polsce Ludowej* [Vocational education in Poland]. Warszawa, Państwowe Zakłady Wydawnictwa Szkolnych, 1967. 231 p.

Information on the role of vocational education in the Polish education system.

251. Spain. Laws, statutes, etc. Proyecto de Ley general de educación y de financiamiento de la reforma educativa [Bill on education and the financing of its reform]. *Hojas informativas* (Madrid), no. 118, 1969, p. 9-36.

The Bill sets out the reform of the educational and training system, including initial and later vocational training, in both State and private training centres, with the teaching staff and their qualifications and with the necessary administrative aspects. In the field of vocational training there are to be three stages: (1) for those having completed eight years' basic education, (2) for those with secondary education, or having completed stage 1, (3) for those with university qualifications, or stage 2 and supplementary studies. Teaching staff are to possess a pedagogic training in addition to technical qualifications and for this purpose the institutes of education (*institutos de ciencias de la educación*) will provide suitable courses. The Minister is to have a Technical Inspection Service (*Servicio de Inspección Técnica de Educación*). The present 'workers' universities' (*universidades laborales*) will act as training centres within the general framework of this law.

252. Sperl, S.; Winter, H. Blockunterricht an der Kaufmannsschule in München [Block-release courses in the Munich commercial college]. *Wirtschaft und Erziehung* (Wolfenbüttel) Bd. 23, Nr. 5, Mai 1971, p. 103-108.

Description of a block-release system whereby periods in the college alternate with periods of on-the-job training in the retail or wholesale sectors of commercial activity. The total training is spread over three years, of which 10 months are spent in college, 20 months in employment, and the remainder is taken up by vacations. The 'blocks' consist of two months in college and four at work, and the previous curriculum has been re-cast to ensure that the students are of practical use in the office and that the office training is a stimulus to their next block of college study. Co-operation with the firm(s) concerned is essential to the success of such a scheme.

253. Straubenzees, W.R. van. *Journal of the British Association for Commercial and Industrial Education* (London), vol. 24, no. 4, December 1970, p. 128-134.

Description of the role of further education in supplying the skills required by industry. Further education courses associated with industrial employment, day-release, have the following main aims: a knowledge and appreciation of techniques which enable the student to derive greater benefit from his practical training; a broad understanding of the relevant science and technology, which will help him to meet inevitable changes in his work; an opportunity to further his general development as an individual. Of the two million young people composing the 15-17 age-group, statistics show that 45 per cent are at school, 6 per cent are in full-time further education, 49 per cent are employed (12 per cent attending part-time classes). Thus a total of 63 per cent are receiving some form of education above the statutory age.

254. Sweden. Ecklesiastikdepartementet. *Yrkesutbildning och arbetsliv Samverkan och ansvarsfördelning* [Vocational training and working life. Co-operation and responsibility]. Stockholm, Allmanna forlaget, 1970. 103 p.

255. Sweden. Ecklesiastikdepartementet. Yrkesutbildningsberedningen. *Yrkesteknisk högskoleutbildning* [Post-secondary vocational education]. Stockholm, Statens offentliga utredningar, 1970. 162 p.

In 1966 the Commission on Vocational Training recommended integration of the three types of secondary education; now it is proposed to extend the vocational stream into the higher education phase in an establishment to be known as an 'yrkesteknisk högskola' (technical university). Among the main purposes would be: upgrading of persons already in employment and basically qualified; supplementary occupational training for vocational teachers prior to their pedagogical training. The syllabuses would contain both general and vocational elements; and the aim would be that of those completing secondary education, 25 per cent would proceed into post-secondary training.

256. Swedish International Development Authority. *Vocational education and vocational teacher training in Pakistan*. Stockholm, 1971. 141 p.

An analysis of future priorities for Swedish technical co-operation in training and education, for rural skills etc., with reference to the present national organization of vocational education, and supporting an intended programme of education with a vocational bias designed to ensure a sufficient flow of middle-level skilled workers. A technical matriculation is foreseen, together with a new course structure for the technical colleges which will afford a progression of qualifications.

257. Szajek, S. Współczesne poglądy na kształcenie ogólne w szkołach zawodowych. Część I [Modern views on general education in vocational schools. Part I]. *Szkola zawodowa* (Warszawa), no. 7/8, 1967, p. 10-14.

The 1961 Act on the development of education in Poland states that vocational schools are to train students in a chosen occupation and to provide them with the general education necessary for the continuation of studies at advanced level. Modern development of science and technology, often called a third revolution, confirms the principles of the Act. It must be remembered that the number of occupations where no general education background is necessary is rapidly diminishing and that in the school year 1965/66, 66 per cent of primary school leavers entered vocational schools. A review of foreign theories on the role of general education in vocational training shows that Polish policy reflects the universal tendency.

258. Tetsuya, I.; Haruo, M. *Sangyo to kyoiku* [Industry and education]. Tokyo, Dai-ichi hoki, 1967. 322 p.

259. Tymowski, J. Profil technika [Job specification for the technician]. *Szkola zawodowa* (Warszawa), no. 3, 1967, p. 20-23.

This article advocating broadening the scope and range of technicians' duties and their employment in place of professional engineers where possible gives an account of research in Czechoslovakia and the German Democratic Republic on the training needs of technicians.

260. United Kingdom. Ministry of Labour. Central Training Council *Industrial training and further education*. Memorandum no. 4. *Ministry of Labour Gazette* (London), vol. 74, no. 4, April 1966, p. 158-9.

Memorandum on the practical issues involved in the integration of vocational training and further education.

261. United Kingdom. National Advisory Council on Education for Industry and Commerce. *Report of the Committee on Technician Courses and Examinations*. Department of Education and Science, London, 1969. 127 p.

In May 1967 the Secretary of State for Education and Science invited the National Advisory Council on Education for Industry and Commerce to review the national pattern and organization of technician courses and examinations. The outcome was this comprehensive report, based on the premises that the technician is an indispensable type of manpower between that of the skilled worker (craftsman) and the qualified professional engineer, and that the present national provision and organization of technician training courses is unsuitable to meet future requirements both qualitatively and quantitatively. The report recommends the replacement of existing bodies in this field by two only, viz., a technician education council and a business education council with a standing consultative committee to co-ordinate policy. The actual administrative work for both would be done by one agency, the existing City and Guilds of London Institution. A new pattern of courses is set out replacing the present medley of various technician avenues of training. The first two years after leaving school would be occupied with the basic technicians training, leading to the Technician Certificate or Diploma (according to breadth of study), after which suitable candidates could proceed to the Higher Technicians Certificate (660 hours) or Diploma (1,200 hours). 'Bridge' courses or follow-on courses would permit the student of exceptional ability to transfer to Higher National Diploma courses and qualification, or even to a university degree course. Further recommendations include such questions as transition from school to further education, the bridging between courses, student assessment, the form of attendance—part-time, block, sandwich, etc.—and the position and value of general studies in the programme. Attention is also given to the correspondence course as a medium of instruction for exceptional cases, particularly in the business sector, and to conversion courses and further training for mature students. There are eight appendices, the last of which is an account of technician education and training in some other countries by way of comparison.

262. Vaizey, J. Setting educational objectives for the 1980's. *Journal of the British Association for Commercial and Industrial Education* (London), vol. 22, no. 4, December 1968, p. 163-167.

Discussion of the main trends discernible in educational policies, structure and administration, and of training in relation to industry.

263. Velickov, S. Tehničeskot progres i vlijanieto mu vërhu razvitiето na profesionalnoto obrazovanie [Technical progress and its effect on the development of vocational education]. *Prof. obrazovanie* (Sofia), no. 1, 1972, p. 10-14.

264. Venables, P. Technical and higher education—the changing pattern. *Journal of the British Association for Commercial and Industrial Education* (London), vol. 23, no. 4, December 1969, p. 162-167; vol. 24, no. 1, March 1970, p. 32-40.

These articles review the changes in the structure of British technical education since 1919 and intervening developments up to the establishment of the new system of polytechnics. The binary system, whereby degree courses are available both in universities and also in polytechnics and some technical colleges, is outlined as is the growth of management and business studies courses. Factors influencing change now and in the future are commented upon.

265. Venkata, B. *Education and training for industrial development in India*. Stanford, California, Stanford International Development Education Center (SIDECE), 1969. 97 p.

This report is concerned with training problems at levels below that of the university. It comments on the weak points of the existing vocational school system and on the difficulties of finding suitable employment for secondary or comprehensive school leavers. The problem of skill training in and for small industry is discussed.

266. Wissing, J.A. Modell einer Ordnung der gewerblichen Berufsausbildung in Entwicklungsländern [A pattern of vocational training for use in developing countries] In: *Berufsbildung zwischen Tradition und Fortschritt*. Köln, Wolfgang Stratenwerth, 1967. 391 p.

This paper is concerned with improving the quality and practical value of vocational training in the developing country.

267. Witalewska, Henryka. Szkoły pomaturalne [Post-secondary education] *Głos naukowy* (Warszawa), vol. 51, no. 37, 15 September 1968, p. 5.

Description of a new method of school-based training designed to fit those who have already gained their general secondary leaving certificate for positions in the service sectors.

268. Young, J.T. Technicians of the world. *Education and training* (London), vol. 14, no. 8, August/September 1972, p. 263-265.

This article relates the emergence of the technician in recent industrial development. An important factor in determining the success level of an industrial society is the provision it makes for the instructional needs of technicians. There is still much resistance on the part of educational administrators to the acceptance of this field as equally valid with university training or other forms of higher education. The planning of 'a second way' enabling the technician of exceptional ability to proceed to university-level study may be a form of social justice but it is sometimes harmful to the design of technician courses. Reference is made to the OECD technician reports for various countries. The linkage between general and technical education and the consequent 'liberalization' of vocational studies are welcomed. The planning stage is still in development and no country has reached finality in technician training. Occupational analysis is essential as a basis; the course must then lie between the limits of being too specific to be transferable to associated fields of work and, on the other hand, too general to be related to occupational needs. The importance of 'communication' in all aspects is stressed. The administration and siting of technician training establishments is discussed. In the modern world technician education affects a large proportion of the 13-19 age range and should receive massive support and attention if the needs of a technological society are to be fully met.

269. Yugoslavia. National Technical Council. *Naučno-tehnička kultura i proizvodno-tehničko stvaralaštvo u Jugoslaviji* [The scientific-technical culture and production-technical creativity in Yugoslavia]. Beograd, Veće narodne tehnike Jugoslavije, 1970. 135 p.

Description of the system of technical education in Yugoslav schools, especially elementary and secondary, and discussion of its strengths and weaknesses. Among the most significant factors in the development of the scientific-technical culture and production-technical creativity is the National Technical Council, which not only organizes and carries out a wide range of activities in this area, but also frequently initiates and coordinates other activities with groups involved in the technical education of all sections of the population. Operating within its framework are 19 specialist technical organizations.

270. Zieliński, Z. Z zadagnien szkolnictwa zawodowego [Some problems in vocational education]. *Nowe drogi* (Warszawa), vol. 21, no. 7, 1967. p. 87-98.

An article drawing attention to the numerically uneven development of vocational schools and technical colleges, producing imbalance in the labour force.

271. Zieliński, Z. Tendence rozwojowe szkolnictwa zawodowego w okresie 25-lecia PRL [Developmental tendencies in vocational education in the Polish People's Republic during the past 25 years]. *Szkola zawodowa* (Warszawa), no. 7/8, 1969, p. 5-8.

Pointing out dependencies between the development in vocational schooling and social-economic progress in Poland, the article relates successive stages in vocational education: 1945-50 with seven-year primary school; 1951-58 with four types of vocational school; Act of July 1961 with eight-year primary school and resulting changes in vocational schooling.

IV. Content and methods

272. Abel, H. *Pre-vocational training as part of compulsory education*. Paris, Organisation for Economic Co-operation and Development (OECD), 1966. 13 p. (European Conference on Manpower, Automation and Technical Change)

A report on general and basic vocational training during the last year(s) of compulsory education.

273. Abrosimova, E.A. Organizacija professional'noj podgotovki učaščihsja IX-X klassov obščebrazovatel'nyh škol [Organization of vocational training for 9th and 10th year secondary school pupils]. *Škola i proizvodstvo* (Moskva), vol. 10, no. 10, 1966, p. 3-9.

An article affording guidance to secondary schools which provide vocational training; trade training should only be attempted where there are well-equipped workshops.

274. Babuškin, G.D. Setevoe planirovanie diplomnogo proektirovanija [A selection of planned diploma projects] *Srednee special'noe obrazovanie* (Moskva), no. 10, 1970, p. 14-17.

275. Balogh, T. Education must come down to earth. *Ceres* (Roma), vol. 1, no. 2, marzo-aprile 1968, p. 14-18.

A plea for a new outlook on education in developing countries; the anti-technological attitude might be eliminated through an educational policy based on rural advancement. The role of the rural schools and of the agricultural extension centre is thus important. Actual constructive work is to be encouraged.

276. Barry, W.S. A British standard specification for teaching machines and programmes. *Journal of the British Association for Commercial and Industrial Education* (London), vol. 22, June 1968, p. 73-75.

An article on the drawing up of a national standard specification for linear machines and programmes. The publication of a register of programmed instruction texts to keep potential users informed of what is available is also commended.

277. Baschiera, K. *The teaching of modern languages in secondary vocational and commercial schools*. Strasbourg, International Association of Publishers of Applied Linguistics, London [etc.], Harrap, 1970. 160 p., bibl. [Council for Cultural Co-operation of the Council of Europe]

An account of language teaching methods and developments in the technical schools of Europe.

278. Campbell, R.R.; Honnold, G.H. *Bell laboratories record* (Murray Hill, N.J.), vol. 48, no. 1, January 1970, p. 23-25.

Systems are being developed, by which students can obtain extra instruction at home by means of the Touch-Tone telephone. Two such systems now being considered by the Boards of Education of New York City and Oak Park-River Forest, Illinois are outlined. One of these is designed to give practice in the fundamentals of arithmetic; the other tutors in a wide range of subjects.

279. Carroll, A.D. Team-teaching in technical education. *Trends in education* (London), no. 21, January 1971, p. 35-40.

An article on the value of team-teaching in technical colleges. The team has a potential greater than the individuals taken separately, and may generate more enthusiasm. A new approach to school organization is thus called for.

280. Council of Europe. Council for Cultural Co-operation. *The use of closed circuit television in technical education*. Strasbourg, 1966. 94 p.

This report of a series of seminars held in Belgium and collating European experience in the field, describes experiments with CCTV carried out by various technical colleges in several countries.

281. Dahllöf, U. *The contents of education with regard to demands for different jobs and for further studies*. Review of some Swedish studies concerning the qualitative aspects of education. Prepared for the OECD 1963, 2 ed. Stockholm, Institute of educational research, School of Education, University of Stockholm, 1965. 39 p.

282. Davies, L. *Liberal studies and higher technology*. Cardiff, University of Wales Press, 1965. 345 p., bibl.

The problem of integrating liberal studies (humanities and cultural subjects) into courses of technology.

283. Dobson, C.G. *Job skill training*. Denver, Col., Bi-national Development Corporation, 1969. 60 p.

The report is concerned primarily with the development and utilization of the labour force in Central America and Panama. This development should be based on the concept of lifelong vocational training and education. Occupational preparation should be a regular feature of the final year(s) of the basic elementary school. Classes for adults and a regular up-grading system are required.

284. Ford, C.R. Development of technical course curricula must begin with analysis of occupation. *Canadian vocational journal* (Winnipeg), vol. 3, no. 2, 1967, p. 10-15.

An article on the recent development of technician education and training, pointing out that the design of such courses should be achieved after occupational requirements have been studied.

285. Forrester, J.W. Der Ingenieur im Jahre 2000 [The engineer in the year 2000]. *Fort-schrittliche Betriebsführung* (Darmstadt), 17. Jahrgang, Heft 1, Juni 1968, p. 17-23.

The author of this article is a professor of management at Massachusetts Institute of Technology, USA. Amongst other things the comments on the badly defined role of the engineer, the problem of integration into the hierarchic bureaucracy of management, and inadequacies in the training of the engineer, with proposals for future training.

286. France. Institut pédagogique national. Paris, Journées, Sèvres, 13-14 mars 1969. *Philosophie et enseignement technique*. Paris, 1970. 76 p.

287. Frank, N.H. Changing requirements for technical education. *American vocational journal* (Washington D.C.), vol. 42, no. 4, p. 21-22.

An article outlining the need for technical education to adapt to changing requirements, and the value of grouping educational programmes containing common features. The recommendations give groupings in categories such as: energy-conversion, systems and operations, electrical mechanical, thermal, chemical, nuclear, or a combination; communication systems and operations; transportation systems; operations and processes with living organisms.

288. Fremine, R. L'information des enseignants et l'enseignement programmé. *Enseignement programmé* (Paris), n° 7, 1969, p. 9-15.

Issues arising from the introduction of programmed instruction: the training of teachers, need to keep parents and administrators aware of the developments possible, and future prospects.

289. Fritz, J.O. The emergence of instructional systems—the educationist's predicament. *Canadian education and research digest* (Toronto), vol. 8, no. 2, June 1968, p. 119-131.

Discussion of corollaries of the introduction of audio-visual aids to teaching and to programmed instruction systems, of the changing role of the teacher and the need to keep truly educational objectives in sight.

290. Géminard, L. Problèmes d'enseignement et sections d'éducation professionnelle. *Revue française de pédagogie* (Paris), n° 4, juillet/septembre 1968, p. 5-17.

This article speaks of some of the problems, organizational and educational, which arise in the new streams of vocational orientation in the final year of compulsory schooling.

291. Gilbert, T.G. *Mathetics: an explicit theory for the design of teaching programmes*. London, Longman, 1969. 144 p., figs.

Outlines the design of teaching programmes in relation to an analysis of their objectives and the systematic application of 'reinforced learning' techniques.

292. Giugni, G. La validità pedagogica degli 'Incontri dei giovani con il mondo del lavoro' [The educational value of 'introducing the young to the world of work']. *Orientamento scolastico e professionale* (Roma), vol. 7, no. 25, gennaio/marzo, 1967, p. 2400-2411.

An article commending a programme whereby young people in their last year at the junior secondary school (11-14) engage in visits, projects, study tours, etc., and stating the value and importance of educational and vocational guidance centres.

293. Godlewski, M. Nowoczesne pomoce dydaktyczne w procesie kształcenia i doskonalenia zawodowego [Modern teaching aids in the process of instruction and raising professional qualifications]. *Oświata dorosłych* (Warszawa), no. 2, 1971, p. 65-77.

Main directions of changes in the content of training, and the raising of professional qualifications make it necessary to intensify the didactic process. From the point of view of modernizing this process the author discusses active teaching methods (demonstration observation, programmed instruction etc.), teaching aids (tables, pictures, slides, films, models, etc.), and technical means of instruction in modern workshops and laboratories. The methods concern secondary vocational and adult courses.

294. Gondocs, K. *A szakmai szint alakulásának vizsgálata a gépipari termelés igényei alapján* [An investigation into training at qualified level taking into consideration the interest of production in the mechanical industry. Elaboration of the curriculum for secondary education]. Budapest, 1971. 221 p.

Investigating the occupational level gives the author his base for secondary school vocational training. Whilst he is concerned primarily with mechanical engineering his theories are applicable also to other fields. He distinguishes between the occupational level and that of vocational training in the schools. The former is set by the needs of the job, and the level of the vocational school should rest on this fact.

295. Gonzalez, A.F. La enseñanza tecnológica en la taller docente [Technical education in the workshop]. *Revista de educación* (Madrid), vol. 66, no. 192, octubre 1967, p. 7-12.

An article which elaborates upon the theme of instructional documents in the workshop—exercise cards, test sheets, etc.

296. Grégoire, R. *Vocational education*. Paris, Organisation for Economic Co-operation and Development, 1967. 146 p.

This report is concerned with the problems involved in the adaptation of present systems of vocational education to meet the pressing needs of modern industry and commerce. Notwithstanding the value of a heritage from the past, changes must be rapid and effective to meet the needs of technical change. A more systematic approach to the provision of 'continuous' education and training is demanded. The work includes descriptions of existing and projected systems and recent changes in various countries.

297. Grote, C.N. Relevance thro' vocational education. *Agricultural education magazine* (Madison, Wisc.), vol. 42, 6 December 1969, p. 137-39.

'Relevance' means that the education offered must have a close and logical relationship with the problems that society faces. Many people consider that this is not the case of the present education system in the United States, where the percentage of unskilled and semi-skilled labour dropped from 50 to 26 between 1930 and 1970, whilst that of middle-level technicians increased from 23 to 50. The present drop-out and unemployment rates call for urgent action.

298. Hardie, D. Methods of teaching trade skills. *Personnel practice bulletin* (Melbourne), vol. 22, no. 2, June 1966, p. 5-16.

A review of the literature on trade schools, taken from British, American, and European sources.

299. Hare, R. *Know how: a student's guide to project work*. London, Intertext Books, 1970. 183 p., illus.

This book gives guidance to the student embarking upon a project. The organization of the subject and personal approach to it, letter-writing, access to libraries, tape-recorders, use of cameras, and presentation of the results of the work, are all given considerable attention.

300. Holding, D.H. *Principles of training*. London, Pergamon Press, 1965. 172 p.

A book providing the instructor in practical subjects with a synoptic view of fact and experimental record in the field of vocational training: methods of assessment, trainee response, curves of learning, transfer of training and skills, and programmed learning.

301. Horner, R. Zur idealen Grundlegung der Berufsschule [The basic principles of the vocational school]. *Die österreichische pädagogische Warte* (Wien), Bd. 57, Nr. 1/2, 1969, p. 9-12.

302. Ivey, L.T. Technological innovation in elementary industrial arts. *School shop* (Ann Arbor, Mich.), vol. 29, no. 8, April 1970, p. 104-108.

Article relating an experimental project which introduced 'industrial arts' at primary school level in order to bring technological development to the notice of the pupils. The project concerned a population of 25,000 whose average education was at the level of 7.7 years and whose drop-out rate was 40 per cent.

303. Japan. Ministry of Education. *Kotogakko kohyo-ka shido no tebiki*. [Teachers' manuals on courses of study for the industrial upper secondary school].

Manual for mechanical course 1966. 522 p.

Manual for electrical course 1962. 328 p.

Manual for electronic course 1966. 458 p.

Manual for architectural course 1966. 438 p.

These are compiled for the conduct of such vocational courses as are quoted above, and for the solution of problems that may arise therein. All of them contain common items such as historical review, aims, organization of curriculum, workshop practice, teaching plans and models.

304. Japan. Research Council for Industrial Arts Education. *Gijutsu-ka kyoiku ron* [Theory of industrial arts education]. Tokyo, Bunrishoin. 1970. 211 p.

This book is the joint work of 34 co-writers, mostly lecturers in teacher training colleges, whose object was to provide a textbook of teaching method for industrial arts in secondary schools. The six chapters cover: history, character, and objectives of industrial arts; teaching methods and educational technology; teaching programmes, and methods of evaluation; outline of teaching content and its main aims; facilities and equipment; in-service training, and the role of technical education in society. There is a consistency of approach to the matters related since the co-writers were unanimous on general policy.

305. Japan. Institute of Electrical Engineers. Committee of technical experts on the application of information techniques to education. *Atarashi-i jidai e no kyoikukogaku* [Educational technology for a new era]. Tokyo, Ohmu sha, 1972. 290 p.

306. Jerkov, M. Usvojeni su novi nastavni planovi i programi za ekonomske, komercijalne i turističke škole [Adoption of new syllabuses and curricula for economics, commercial and tourism schools]. *Pedagoška stvarnost* (Novi Sad), 1970, no. 1, p. 25-33.

The Educational Council of the Socialist Republic of Serbia adopted proposals for syllabuses and curricula for economics, commercial and tourism schools submitted by the Institute for Vocational Education of Serbia—on the basis of a report by the Commission for Economics Education of the Education Council. The common characteristic of the syllabuses and curricula is co-ordination with the bases of secondary education, which means the introduction of some new general education knowledge which was not earlier available, in the schools concerned. This relates to the natural sciences, and physics and biology have been introduced as new teaching disciplines.

307. Jovanov, S. Jedan prilaz planiranju nastave opštetechničkog obrazovanja [An approach to planning and preparing general technical education and instruction]. *Pedagoški život* (Zrenjanin), 1967, no. 5-6, p. 101-108.

General technical education should not be only a separate subject in the school but rather a complete system which contains the following elements: a study of the natural science bases of modern technology and production, work in the field of modern production and the mastering of technology, socially useful work with good production-economy results, and free-choice activities in certain branches of science and technology, both in school and outside of it.

308. Kahane, R.; Starr, Laura. *Hinukh tekhnologi-mikzo'i ve-integracia kalkalit hevratit be-yisrael* [Vocational-technical education and socio-economic integration in Israel]. Jerusalem, Hebrew University, School of Education, 1972.

This survey attempts to examine the present dilemma of the vocational-technical system in Israel, namely that the syllabus based on pressing demands for qualified manpower accords ill with the low ability and socio-economic backgrounds of those enrolled in these courses of training. Often the jobs are of low prestige, not aiding social integration or mobility and not reflecting the values of a 13-year education. It would overcome some of these problems if the curriculum were abated to be less demanding, but in fact the opposite is tending to happen: high-achievement courses are adopted owing to economic and parental pressures and to the career ambitions of the staff. There are few teachers qualified to deal successfully with the disadvantaged and this is a further negative factor. The survey is still proceeding with further research both as regards staff and students.

309. Karačić, T. O reviziji nastavnih programa i sistema finansiranja [Revisions in the curricula and the system of finance]. *Prosvjetni list* (Sarajevo), 1970, no. 368, p. 2.

The Association of Technical Schools and School Centres of Bosnia and Hercegovina held a symposium for representatives of technical schools and school centres, associations of elementary education, educational services, the Institute for Textbook Publication and others, on the current questions in the life and work of these institutions. Among the items considered were the concept, contents and importance of the evaluation of the work of the technical schools and centres, requirements for teachers in regard to school qualification, teaching experience and advisory-psychological education and further training, revision of curricula and syllabuses to fit the teacher's 35-hour weekly work load, the possibility of introducing the five-day school week, and current questions of finance, further training of teachers, excursions.

310. Klafki, W.; Otto, G. *Werkerziehung in der technischen Welt* [Workshop education in the technical society]. Stuttgart, Ernst Klett Verlag, 1967. 144 p.

The theme of this work is that an introduction to production should be given early in education, thus bringing secondary education into the real and present world.

311. Kligman, I.N. Eta problema volnuet vseh [This problem worries all of us]. *Srednee special'noe obrazovanie* (Moskva), vol. 18, no. 6, 1971, p. 10-12.

This article expresses concern that technician training in the technikums does not do more to develop organizing and administrative abilities in their graduates.

312. Kovner, E.A. Training nuclear technicians. *School shop* (Ann Arbor, Mich.), vol. 26, no. 7, March 1967, p. 58-59, 75.

An outline of the content of a technician-level course commenced in a community college in Virginia, USA, affording education and training in nuclear technology.

313. Kowalczyk, W. Postęp pedagogiczny w szkolnictwie zawodowym [Pedagogical progress in vocational education]. *Szkola zawodowa*. (Warszawa), no. 10, 1966, p. 4-7.

314. Kuhn, H. Entwicklungstendenzen des Inhalts der sozialistischen Berufsbildung in der Deutschen Demokratische Republik [Trends of development in the content of socialist vocational training in the German Democratic Republic]. *Forschung der sozialistischen Berufsbildung* (Berlin), Bd. 1, Nr. 1, April 1967, p. 9-48.

A close relation between vocational training and general education is commended.

315. Kuzmin, B.A.; Greckaya, G.T. Soversenstvovat formy i metody prakticeskoj podgotovki tehnikov [Methods of improving workshop training of technicians in schools]. *Srednee special'noe obrazovanie* (Moskva), vol. 16, no. 2, febr. 1969, p. 2-6.

316. Laerlingeideer prøves i praksis [Apprentice ideas are tested by practice]. *Arbedsgiveren*. (København), no. 6, 20 marts 1971, p. 24-25.

Account of how two commercial schools, one in Copenhagen and the other in Århus, have carried through a new form of apprentice training, consisting of one full-time year at school followed by two years of training with a firm, under contract.

317. Lamb, B. *New methods and media in further education*. London, National Council for Audio/Visual Aids in Education, 1971. 64 p.

The use of audio-visual aids in colleges of further education, team teaching, use of television, programmed instruction, etc.

318. Linke, W. *Cambio di esperienze pedagogiche fra paesi della Comunità Economica Europa nel settore della istruzione professionale* [Exchange of experiences concerning vocational training among the countries of the European Economic Community]. Roma, UNITESA, 1969. 32 p. (1° convegno internazionale sulla formazione professionale in Europa)

319. Linthoudt, K. van. Die polytechnische Lehrgänge Niederösterreichs im ersten Jahre der Schulwirklichkeit, Schuljahr 1966/67 [Polytechnical classes during their first year of existence in Lower Austria, 1966-67]. *Erziehung und Unterricht* (Wien), Bd. 118, Nr. 3, März 1968, p. 171-179.

Description of the commencement of polytechnical classes in Lower Austria: the preparatory work, the teaching staff, syllabuses, response of parents and pupils, statistical data and results.

320. Louanchi, T. L'Algérie expérimente l'enseignement programmé et télévisé. *Inter-audiovision* (Paris), n° 30, 1968, p. 16-19.

321. Lukens, R. *Remote access instructional resource systems key to the future of educational technology*. Proceedings of 6th annual National Colloquium on Information Retrieval, May 8-9 1969, Philadelphia, Pa.

A remote access instructional resource system is described as the means of collating the services of many different types of educational technology and facilities. An area to be known as a 'study carrel area' would be devoted to this purpose.

322. Marshall, Patricia. Training by mail. *Manpower* (Washington D.C.), vol. 2, no. 3, March 1970, p. 8-12.

An article outlining the use of correspondence courses in the USA and making an analysis

of the kind of people who use them. Total users are quoted at 5 million, of whom the largest group are skilled workers and foremen, one half of these living in thinly populated areas.

323. Mausolf, J. A comparative study of the influence and effectiveness of secondary school syllabuses taught in Australian technical schools. *Australian technical teacher* (Brisbane), vol. 3, no. 2, May 1971, p. 31-41.

324. Meura, M. Problèmes de l'apprentissage. *La Nouvelle revue pédagogique* (Tournai), vol. 21, n° 8, avril 1966, p. 478-484.

An article on the first phase of multi-purpose secondary technical education prior to the pupil's choice of a particular occupation and specific training.

325. Németh, G. A szakképzés korszerűsítésének szükségessége. [The necessity to modernize vocational training]. *Középfokú szakokt* (Budapest), 3. évf. 10. sz., 1970, p. 5-7.

326. Neskovič, Glisa. Osavremenjivanje nastave matematike u stručnim školama u Srbiji [Modernizing the teaching of mathematics in vocational schools in Serbia]. *Naša stručna škola* (Beograd), 1969, no. 11, p. 5.

327. Nitzan, Esther. *Bet ha-sefer ha-mikzo'i, tokhnit ha-limudim ve-zorkhey ha-meshek be-anfey ha-mishar, banqa'ut u-minhal*. [The vocational school, curriculum and market needs in branches of trade, banking and administration]. Jerusalem, Henrietta Szold Institute, the National Institute for Research in the Behavioural Sciences, 1970. 138 p.

This research compares the actual occupational skills required in office work and the present curricula of vocational schools which offer courses of general and clerical subjects lasting two, three or four years. Questionnaires answered by employers indicated that 39 per cent of present office workers have a two-year high school education, 24 per cent have three years, and 24 per cent four years or more. These facts are thought to indicate greater need for four-year training. Employers were well satisfied with standards in Hebrew and English, accounting, bookkeeping and office work. Less satisfaction was expressed with Hebrew typing and shorthand, pricing and statistics, economics and insurance.

328. Omelianenko, B.L. *Preparación, producción y distribución del material didáctico destinado a los establecimientos de formación profesional y técnica* [The preparation, production and distribution of teaching material for use in vocational and technical schools]. Geneva, International Labour Organisation, 1968.

A statement referring to conditions in the USSR affecting the preparation, production and distribution of teaching aids suitable for use in technical/vocational educational establishments.

329. Orata, P.T. Community schools in the Philippines. *Prospects in education*. (Paris), no. 1, 1969, p. 53-58. [Also published in French]

This article deals with the setting up and development of schools for rural youth combining vocational training with general education, and their role in the country's development. Such 'community secondary schools' lead to later entry for some to the 'community college'. The schools derive some of their revenue from pupils' earnings on work done.

330. Owczarz, Elzbieta; Rusek, Eva. Kształtowanie stosunku do pracy uczniów szkoły zawodowej [Forming pupils' attitudes towards work in vocational schools] *Szkola zawodowa* (Warszawa), 1969, no. 12, p. 16-20.

The article presents research results obtained by the Section for Psychosociology of

Labour in the Academy of Mining and Metallurgy in Cracow. The authors discuss problems of attitude formation which should take place in the preparatory period in order to work out a proper attitude of a future worker towards his tasks both of a didactic and of a vocational character. The role of vocational schools is significant not only because of their contribution to the preparation of future specialists for the national economy but also because of their contribution to the formation of proper social attitudes. An exemplificatory questionnaire and its results are presented in the article, which concludes to the need for large-scale informative activity.

331. Papai, Bela. A szakmunkásnevelés korszerű fejlesztése a pedagógia néhány időszaki feladatának vetületében [Modern development in the education of the specialized worker as a function of several pedagogic tasks]. *Szakmunkásnevelés* 21. évf. 2 sz., 1970, p. 1-6.

332. Polesickij, A.E. Naš opyt issledovanija mezpredmetnyh svjazej i ih ulučsenija [Our investigation results on inter-disciplinary links and their improvement]. *Srednee special'noe obrazovanie* (Moskva), no. 1, 1971, p. 17-19.

333. Power, T.V. Folklore of teaching aids. A review of some research papers. *Vocational aspect* (Bolton, Eng.), vol. 23, no. 56, 1971, p. 109-113.

A review of the comparative value of teaching aids, the assumptions made, and recent research thereon.

334. Programmy srednej skoly. Trudovye politehničeskie praktikumy IX-X klassah [Secondary school syllabuses. Polytechnical work of practical character in the 9th and 10th classes]. *Škola i proizvodstvo* (Moskva), vol. 11, no. 4, 1967, p. 8-26.

An article on the implementation of the various 'polytechnical work' programmes devised for the general secondary schools of the USSR.

335. Radwilowicz, R., ed. *Warunki efektywnosci nauczania w szolach zawodowych* [Conditions for efficient teaching in vocational schools]. Warszawa, Panstowe Wydawnictwa Szkolnictwa Zawodowego, 1968. 381 p.

A collective publication based on the results of experimental investigation conducted in various vocational schools, aiming at the various factors affecting the efficiency of teaching.

336. Raev, A.; Fedorova, O. Učebnye instrukcii na uroke [Instructions for a lesson] *Professional'no tehničeskoe obrazovanie* (Moskva), vol. 25, no. 3, 1969, p. 8-10.

An article on the use and value of 'instruction cards' as teaching aids for practical training, quoting examples from the building crafts.

337. Reade, L.P. Which road to better training? *Training in business and industry* (New York), vol. 16, no. 4, April 1969, p. 37-40.

An article concerning instructional media, their development and application to industrial training. Assessment of training costs; and computer assisted instruction.

338. Rickson, Marilyn. *Educational technology: a systematic approach for teachers*. London, Ward Lock, 1971. 96 p., bibl.

This publication calls for a more systematic approach in the organization and establishment of educational technology. Research, programmed learning, curriculum development, and training for staff, are among the topics treated.

339. Rivière, P. Le dessin industriel. *Technique art science* (Cachan), no. 208/209, avril/mai 1967, p. 33-34.

A paper setting out the views of an industrial manager on the teaching of technical drawing and the effects thereon of recent educational reforms in France, and also of European integration.

340. Roney, M.W. Educational planning for an emerging occupation. *Journal of industrial teacher education* (Lafayette, Ind.) vol. 5, no. 1, Fall 1967, p. 46-50.

An article on a project worked out in the electro-mechanical industry whereby a new technician programme of education and training was constructed and based on occupational analysis.

341. Rosove, P.E. *Proceedings*. Conference of the American Federation of Information Processing Societies. Fall Joint Computer Conference, San Francisco, December 9-11, 1968, p. 1479-89.

Contextual mapping can be used to predict the future of education and its social and technological environment. The possible role of educators in the 1980's is also considered. The conclusion is that the traditional school can be apart from the world of reality if education is separated from everyday work. A real time approach to research on learning processes indicates that computer-assisted instruction, the teacher also acting as researcher, could be valuable. Other types of innovation in educational technology with input based on new concepts and data are called for.

342. Seymour, W.D. *Industrial skills*. London. Pitman 1966. 401 p., appendix.

This comprehensive book relates and surveys more than 20 years' experience in the study of industrial skills and training. Its three main parts deal with the nature of skills used in industrial practice in relation to human performance and resulting productivity; research, and knowledge of means and process of acquisition of skills; current experience in the techniques of imparting skills.

343. Smirnov, V.V. *Primenenie metodov matematičeskoj statistiki v tehnikume* [Application of methods to mathematical statistics in the technicum]. *Srednee special'noe obrazovanie* (Moskva), no. 5, 1972, p. 8-12., figs.

344. Sokolov, A.G. *Vozmožnosti soedinenija obščego i professional'no tehničeskogo obrazovanija* [The possibilities of combining general education and vocational training]. *Sovietskaya pedagogika* (Moskva), vol. 23, no. 3, 1969, p. 39-46.

This article describes the methods in current use, and a survey by the Institute for Research on Vocational Training.

345. Spence, H. The one-year integrated course in engineering. *Technical education and industrial training*. (London), vol. 10, no. 3, March 1968, p. 112, 115.

An article on the one-year full-time 'integrated' course for first-year engineering apprentices, and the fusion of general and technical education and training thus achieved.

346. Stadt, R.W.; Kenneke, L. The bewildering educational enterprise. *Journal of industrial arts education*. (Baltimore), vol. 29, no. 3, January/February 1970, p. 21-23.

An article which foresees a metamorphosis of the traditional role of the classroom teacher into something more like that of laboratory supervisor.

347. Steiner. *Berufskunde und Berufsorientierung im polytechnischen Lehrgang* [Career information and guidance during the period of polytechnical education]. Wien, Verlag Ketterl, 1966.

348. Stratenwerth, W. *Bildungsmassnahmen zur Vergrößerung der beruflichen Polyvalenz* [Educational steps towards the widening of multi-purpose training] Köln, Carl Adalbert, 1969. 60 p. (Institut für Berufserziehung in Handwerk, Heft 26)

A study of measures taken in the Federal Republic of Germany to further the acquisition of multiple skills, so that trades need not be re-classified nor craftsmen re-graded so frequently. Training by stages or modules, and the role of the vocational schools are also discussed.

349. Sumner, R. The objectives of craft education. *Vocational aspect* (Oxford), vol. 20, no. 46, Summer 1968, p. 138-149.

Statement of a new need in the design of curricula for craft trades, namely the 'taxonomy' approach. This consists in classifying the objectives to be attained in such training.

350. Swanson, G.I.; Nelson, H.F.; Meyer, W.G. A conceptual framework. *American vocational journal* (Washington D.C.), vol. 44, no. 3, March 1969, p. 22-24.

An article on the necessary relation between vocational programmes and the conditions of the employment market.

351. Sweden. Ecklesiastikdepartementet. Yrkesutbildningsberedningen. *Yrkesutbildningen* [Vocational training]. Stockholm, Statens offentliga Utredningar, 1967. 829 p.

This report contains syllabuses for the vocational streams in the comprehensive secondary schools, envisaging the formation of a basic 'common core' of training for groups of related trades, but allowing for specialization at a later stage.

352. Tonsey, P.J. *Educational aspects of simulation*. London, McGraw Hill, 1971. 273 p., figs.

A valuable reference work in a new field of pedagogy. There are three main techniques, described as case-study, role playing, and 'in-basket' methods, the object being at all times to convert the student into the role of player rather than spectator. The method could be particularly well developed in the work of teacher training.

353. Torbus, W. *Nowoczesne pomoce naukowe w kształceniu zawodowym* [Modern teaching aids in vocational training] Warszawa, Państwowe Wydawnictwa Szkolnictwa Zawodowego, 1967. 222 p.

The first textbook on the subject in Polish pedagogical literature. New teaching programmes for vocational schools assign 40 to 60 per cent of subjects to be taught in the form of practical exercises, hence the role of teaching aids is essential.

354. Trevethin, Hazel. Sinistrality—with particular reference to secretarial skills. *Vocational aspects of education* (Bolton, England), vol. 23, no. 56, November 1971.

A study of the effects of left-handedness on character and social attributes, on skill-acquisition and on proneness to faults. The left-hander lives in a world designed for right-handers and the study of this situation in relation to skill training is a much neglected one.

355. Ullery, J.W. Individualized instructional systems for vocational education. *Educational technology* (Englewood Cliffs, N.J.), vol. 11, no. 3, March 1971, p. 22-26.

Account of research on a project to devise a 'systems approach' to vocational education through individualized instruction, frequent testing, etc. A reduction in wastage and in costs is expected.

356. Unesco. Seminar on Programmed Instruction, Varna, 1968. *Final report*. Paris, Unesco, 1968, 23 p., annexes. (EN/ENPRO/17)

Final report of a seminar on programmed instruction, including teaching machines and the educational use of computers.

357. USSR. Naučno-metodičeskij kabinet po vyššemy i srednemu special'nomu obrazovaniju. *Opyt primeneniya tehničeskikh sredstv obučeniya v tehnikumakh* [Experience in the use of technical means of instruction in technicums]. Moskva, 1966.

In this collection of articles relating the experience of several technicums throughout the USSR in the use of educational technology.

358. USSR. Naučno-metodičeskij kabinet po vyššemy i srednemu special'nomu obrazovaniju. *Opyt primeneniya programirovannogo obučeniya v srednih special'nyh učebnyh zavedenijah* [Experience in the use of programmed learning in specialized secondary schools]. Moskva, 1967. [Extracts from papers delivered at the first all-Union Conference on programmed learning and educational technology].

This symposium is devoted to describing experiences in the use of programmed learning and educational technology in various colleges and institutions in the Soviet Union. Examples of programmed learning, questions of method, preparation of programmes, aids to this work, and an account of the elements used in construction of programmes in the Ukraine, are cited in relation to the work of specialized secondary education. The papers include: 'Use of universal matrices for programmed questions, with inverted construction and the resulting insertion of responses'; 'Experience on preparation and on trial tests of programmed material for use in lessons to technical mechanics by the 'Siberian' electronics examiner'; 'Experience in work on programmed questions in day, and in external, departments'.

359. USSR. Naučno-metodičeskij kabinet po vyššemu i srednemu special'nomu obrazovaniju. *Metodičeskije rekomendacii po ulučšeniju ekonomičeskoj podgotovki učaščihsja srednih special'nyh učebnyh zavedenij* [Recommendations on methods of improving the training of students of economics in specialized secondary schools]. Moskva, 1968.

The main aim of this bulletin is to offer practical help to lecturers in the specialist problems arising in the teaching of the subject 'economics, organization and planning of industry', both by the organization of work in the lecture room and in the conduct of the pre-diploma practical work. Several papers on the subject relate experience in various technicums in different parts of the Union.

360. USSR. Naučno-metodičeskij kabinet po vyššemu i srednemu special'nomu obrazovaniju. *Metodičeskije rekomendacii o putjah ulučsenija kacestva podgotovki specialistov po večernej i zaocnoj formam obučeniya* [Recommendations on method, and ways of improving the quality of the preparation of specialists through evening courses and external forms of education]. Moskva, 1971.

The purpose of this bulletin is to organize the teaching process in evening and external forms of instruction, to raise the level of pedagogic performance, and to set targets for the teaching given by the academic staff as a whole, all relating to specialized secondary schools. Reference is made to a previous directive, based on a conference held in Kharkov, effective from 31 December 1970.

361. U.S. National Advisory Council on Vocational Education. *3rd Report: Vocational Education Amendments of 1968 Public Law 90-576*. Washington, D.C., 1970. 9 p.

A report on the improvement of opportunities for the less privileged members of the young community, including suggestions for acquiring work experience whilst still at school, and guidance for drop-outs.

362. Warren, H.A. *A philosophy of technical education*. London, Association of Colleges for Further and Higher Education. 15 p.

This paper, read at the Association's annual meeting, discusses the relationship, and the avoidance of conflicts, between the growth of technology and the maintenance of human values. It seeks a common objective for both technical and general education in order to achieve a true synthesis between them. Reference is made to the inclusion of 'liberal studies' in technical courses and to the potential character-building power of many technical subjects and their qualities in forming responsible and industrious citizens. The heavy responsibility of technical education and of the teaching staff engaged in it in forming the world of tomorrow, not only technically but socially, is emphasized.

363. Wedell, E.G. *The place of education by correspondence in permanent education*. Strasbourg, Council for Cultural Co-operation, Council of Europe, 1970. 98 p.

Information on the varying use and provision of correspondence tuition within the Member States of the Council.

364. Wucherpfenning, H. Empirische Untersuchung der Unterrichtsformen in Fachkundestunden an Berufsschulen [Empirical research on teaching methods in technology in vocational schools]. *Die Deutsche Berufs- und Fachschule* (Wiesbaden), Bd. 65, Nr. 1, Januar 1969, p. 20-41.

Analysis of classroom procedure and teaching method in the vocational school.

365. Young, J.T. *Technicians to-day and to-morrow*. London, Pitman, 1965. 222 p.

This book is written on the broad subject of technician education and training, the effect of the Industrial Training Act, and the case for combining in the programme a broad general content, both educational and vocational. Among the requirements mentioned for the trained technician are adequate mathematics and basic science, appropriate workshop and laboratory skills, competence in specific techniques, and ability to communicate with other workers. The object is to render a technician course a truly educational experience, extending beyond the bounds of purely specialized training.

366. Zimmermann, G. Die Einführung hochschulähnlicher Lehr- und Lernformen an Fachschulen [The introduction into technical schools of university-type teaching]. *Die Fachschule* (Berlin), Nr. 3, März 1966, p. 84-87.

The article considers that future technicians might be encouraged in the art of individual and original thought if their teaching followed more closely the pattern of university study.

367. Zuckerman, D.W.; Horn, R.E. *The Guide to simulation games for education and training*. Cambridge, Mass. Information Resources Inc., 1970. 334 p., figs.

A guide to several hundred such games.

V. Training of technical and vocational teachers and instructors

368. Alla nöjda med omskolningslärarnas etapputbildning [All-round satisfaction with the new system of 'training by stages' for vocational teachers]. *Facklären* (Stockholm), no. 1, Januari 1967, p. 22-25.

Details and discussion of the new system of teacher training introduced by the National Board of Education in 1966 with the object of stimulating the supply of vocational teachers for the Government re-training centres. Candidates are released from work in 'stages' for a few weeks at a time. In this way 650 have been accepted for training in three years.

369. Allen, D.W. New dimensions in trade and technical teacher education. *American vocational journal* (Washington D.C.), vol. 41, no. 6, September 1966, p. 20-22.

Considering the growing problem of the training of teachers for trade and technical education, the article suggests many modifications: analysis by research of teaching skills, new methods of training, team teaching to deal with groups of up to 100 students, better attention to the 'teaching practice' period, use of micro-teaching methods, methods of evaluating students' attention, etc.

370. Arbetsmarknadens Yrkesrad, Stockholm. *Yrkesteknisk högskoleutbildning och arbetslivsinriktad lärarutbildning* [Higher technical education and teacher training]. Stockholm, 1970. 130 p., figs.

Report on the development of technical education, vocational training and teacher training programmes in Sweden. It covers training programmes and their costing, curriculum design, etc.

371. Ausbildung für das Gewerbelehramt in den Ländern der Bundesrepublik Deutschland [Training of vocational teachers in the Länder of the Federal Republic of Germany]. *Berufserziehung im Handwerk, Untersuchungen* (Köln), 1969, p. 167-184. [Universität, Köln, Institut für Berufserziehung in Handwerk]

Directory of universities, technological institutes and training centres offering teacher training courses for vocational training teachers and instructors in the Federal Republic of Germany, covering admission requirements, duration of courses and examinations.

372. Bear, W.F. The video-tape as a teaching tool. *Vocatio* (St. Paul, Minn.), vol. 1, no. 10, July 1968, p. 13-15., illus.

Brief article on the use of closed-circuit television as an audio-visual aid in teacher training, with particular reference to vocational training education.

373. Ben-David, A. Ba-ayot ha-personnel ha-mikzo'i be-vet-ha-sefer ha-mikzo'i [Problems of the teaching personnel at the vocational high school]. *Ha-hinukh* (Tel-Aviv), vol. 41, no. 4, April 1969, p. 325-335.

Israel has opted to emphasize technical-vocational high schools rather than apprenticeship as a means of training skilled labour. This is heavy on finance, both by reason of expensive equipment and the staff involved. The teaching structure of workshops and theoretical instruction gives excellent opportunity for curriculum co-ordination, and the workshop teacher should participate in some theoretical classes. The qualification level of instructors in vocational schools varies greatly: some are certified teachers (only 3 per cent with degree), some possess trade qualifications, and some uncertified. Few have, or value,

pedagogical training. Teacher training is supervised by the National Institute but is also offered by other institutes; yet even trained teachers lack proper education in the humanities, it is claimed. The lack of motivation to enter the field of vocational training is regarded as one of the constrictions in the system.

374. Berghaus, F. Training officers and instructors have a mission. *Training for progress* (Geneva), vol. 8, no. 2-3, 1969, p. 12-18. figs. [Also published in French]

Article on the teacher training of teachers and instructors employed in vocational training of iron and steel workers in the Federal Republic of Germany. Reviews training programmes, curriculum, training methods, etc.

375. Bjorkquist, D.C.; Brandon, G.L.; Finch, C.R. *Trade and industrial teacher education: a research critique and model for action*. University Park, Pa., Pennsylvania State University, Vocational Education Department, 1968. 16 p., figs., bibl. (Vocational industrial education research report, no. 1)

Report on research in teacher training for commercial education and vocational training teachers and instructors.

376. Blackman, A.R. Technical teachers: their recruitment and training. *Educational magazine* (Melbourne, Australia), vol. 27, no. 11, December 1970, p. 527-530.

377. Bohn, R.C. Industrial arts at San Jose. *Training for progress* (Geneva), vol. 8, no. 2-3, 1969, p. 26-33., illus. [Also published in French]

Article describing an industrial arts teacher training programme in vocational training available at San Jose State College in California for teachers in primary or secondary education in the USA. Covers training programme, admission requirements, training methods, the curriculum, etc.

378. Boydell, T. The roles, competencies and training of the training specialist. *Industrial training international* (London), vol. 5, no. 10, October 1970, p. 424-429., illus.

Article on job requirements and teacher training for vocational training instructors in the United Kingdom, including a job description and discussion of training methods and the training programmes available.

379. Brandtzoeg, A.R. Opplaering av opplaeringsledere [Training of vocational training instructors]. *Yrkes opplaering* (Oslo), arg. 46, nr. 9, november 1969, p. 159-164., figs.

Article on teacher training of vocational training instructors in Norway, covering in-plant training needs, the educational level, the learning process, training programmes, management development, etc.

380. Brazil. Laws, statutes, etc. Decreto Lei no. 616 de 9 de junho de 1969 [Act no. 616 of 9 June 1969]. *Diário oficial* (Brasília), no. 107, junho 1969, p. 4881.

The Act sets up a national training centre (Centro Nacional de Aperfeiçoamento de Pessoal para a Formação Profissional—CENAFOR), for the supply of vocational training personnel. The scope, administration, financial resources, and possibilities of regional or international co-operation are outlined.

381. Brown, D.V. *Planning immediate and long range teacher education programs in vocational education*. Washington D.C., U.S. Educational Resources Information Center, 1970. 2 v., figs.

Report of a conference held at Knoxville from 11 to 22 August 1969 on educational planning in respect of immediate and long-term teacher training programmes in vocational training in the USA.

382. Browne, Joan D. *The development of educational technology in colleges of education*. London, National Council for Educational Technology, 1971. 22 p.

Principles and methods of educational technology in the service of teacher training colleges.

383. Carroll, A.D. Team teaching in technical education. *Trends in education* (London), no. 21, January 1971, p. 35-40.

Article describing the introduction of the team work teaching method into a teacher training programme for vocational training instructors at Huddersfield, and examining the group dynamics of the learning process in the team teaching method.

384. Chantran, P. Une session de formation de moniteurs à la pédagogie agricole au Cameroun. *Promotion rurale* (Paris), n° 28, juillet-août 1969, p. 9-18., figs.

Article on the teacher training of instructors responsible for the vocational training of rural workers and plantation workers in Cameroon, with particular reference to the motivational and psychological aspects of teaching and learning.

385. Chiout, H. Gedanken zur 'Education permanente' des Lehrers, angeregt durch beobachtungen im Auslande [Thoughts concerning 'lifelong education' of teachers, prompted by observations abroad]. *Pädagogische Rundschau* (Düsseldorf), 22. Jahrgang, Heft 3/4, März/April 1968, p. 180-190.

Comparison of the systems of staff training in Germany, Sweden, USA, Poland and Czechoslovakia in respect of both pre-service and in-service courses for teachers, with suggestions for improvements in German teacher training.

386. Coste, P. L'enseignement programmé et la formation des enseignants. *Notre formation* (Montreuil), n° 61, juin 1968, p. 45-49.

Article on the important part programmed instruction may play in the training of teachers right from the outset of their course.

387. Council of Europe. Committee for General and Technical Education. *The training and further training of teachers of commercial education*. Strasbourg, 1970. 48 p. (CCC/EGT (70))

This publication gives the texts of lectures, the reports of discussion groups, and the general conference report concerning the commercial subjects teacher: his role, the characteristics of his teaching, the kind and extent of training required, evaluation of his function and potential teaching aids, and recommendations.

388. Cristea, I. Legatura dintre obiectele de cultura tehnica de specialitate si instructajul practic—conditie a formarii unor priceperi si deprinderi profesionale temeinice. *Bulletin Pedagogic* (Bucuresti), vol. 11, no. 1, 1969, p. 73-80.

Article on the vocational training system in Romania with particular reference to teaching methods and the need for improved training programme design.

389. Diankov, A. Razvitiето na profesionalното obrazovanie i podgotovkata na prepodavatelskite kadri [Developments in vocational education and the training of the teaching staff]. *Problemi na vischeto obrasovanie* (Sofia), no. 5, 1968, p. 12-20.

390. Echols, J.L. Closing the technology gap. *School shop* (Ann Arbor, Mich.), vol. 26, no. 6, February 1967, p. 39-41.

This article considers a new approach to keep technical and vocational teachers in better touch with developments of industry. A pilot project is being studied which would eliminate the gap between classroom and industrial practice. Details of such a scheme involving 60 teachers are given.

391. Fagan, B.T. T and I teacher preparation takes a new tack in Kentucky. *School shop* (Ann Arbor), vol. 27, no. 6, February 1968, p. 58, 70.

Article on a training programme for teacher training in the field of vocational training launched by the Kentucky Department of Vocational Education, including the recruitment of trainees.

392. Ferguson, E.T. *Emerging teacher education curricular models*. Fourth Annual National Vocational-technical Teacher Education Seminar proceedings. November 1-4 1970, St. Louis, Missouri. Ohio, Center for Vocational and Technical Education, Ohio State University, 1971. 188 p. (Leadership training series, no. 33)

This seminar focused on curricular models for teacher education in the field of vocational-technical education. Primary objectives of the seminar were to promote understanding of a performance-based core concept; to focus on an understanding of the teacher educator's role in implementing improvements therein. The seminar report includes the findings of a three-year research project conducted at the Center for Vocational and Technical Education on performance-based model professional offerings.

393. Finch, C.R. The trade and industrial education teacher's background, values, and attitude towards teaching. *Journal of industrial teacher education* (Lafayette, Ind., vol. 6, no. 2, Winter 1969, p. 55-64.

This article relates a study designed to discover the motives and personality of the industrial arts teacher. For the research 76 in-service teachers were used, the average age being 43 years. Further work would be needed to arrive at detailed conclusions but the following points were noticeable: that such teachers were not typical members of the population, that they identified with the craftsman rather than the academic, and that the effects of their general education, extent and kind, were still marked.

394. Finland. *Ammatillisten oppilaitosten opettajakomitean mietinto. Komiteanmietinto 1971: A 30* [Report of the committee on the training of vocational school teachers. Committee report 1971: A 30]. Helsinki, Valtion painatuskeskus, 1972. 63 p.

The task of the committee was to prepare a plan for the organization and development of vocational school teacher training, initial and further. The committee proposed that vocational school teacher training should be based on secondary education. Teacher qualifications should allow scope for variety such as different subject combinations and different training channels. Curricula in teacher training colleges should be continuously revised, and lecturers in training colleges should be appointed only for a certain number of years. The education and training of such staff should be composed as follows: basic general education; actual teacher training (1. vocational studies, 2. pedagogical studies); further training. Pedagogical and vocational studies should be linked together as soon as possible. All teachers should be able to participate in regular further training.

395. Géminard, L. *Formation des professeurs des enseignements techniques et professionnels en Europe*. Paris, Institut national de recherche et de documentation pédagogique, 1971. 247 p.

This book deals with training of technical and vocational teachers in European countries, including Austria, Great Britain, France, Belgium, Finland. The introductory part defines several terms employed in the discussion of technical and vocational education. Part one gives descriptions of the systems of technical and vocational education and the country profiles of the systems of training of the categories of teachers and of teacher recruitment. In part two, the various types of teacher training systems observed are compared.

396. German Democratic Republic. Laws, statutes, etc. Anordnung über die Ausbildung für Lehrkräfte für den berufspraktischen Unterricht von 25. November 1966 [Order of 25 November 1966 concerning the training of teachers who are in charge of practical courses]. *Gesetzblatt der Deutschen Demokratischen Republik* (Berlin), Teil 2, Nr. 1, Januar 1967, p. 1-3.

In future such teachers must undergo the standard training prescribed, but for those already practising in this field a supplementary period of training is prescribed: admission, duration of course, examinations, etc.

397. Germany (Federal Republic). Laws, statutes, etc. Deutsche Gesellschaft für gewerbliches Bildungswesen. Entwurf einer Empfehlung für eine Rahmenordnung der Kultusminister über die Ausbildung für das Lehramt an berufliche Schulen [Draft recommendations for a code of regulations issued by the Minister of Education about the training of vocational teachers]. *Neue Berufsschule* (München) Bd. 15, Nr. 6, Juni 1966, p. 258-261.

398. Gesellschaft für sozialen Fortschritt, Bonn. Ausbildung und Fortbildung von betrieblichen Bildungskräften [Training and further training of industrial instructors]. *Sozialer Fortschritt* (Berlin), Bd. 20, Nr. 10, Oktober 1971, p. 232-240.

Article on the organization by enterprises of teacher training and further training programmes for vocational training teachers and instructors in the Federal Republic of Germany, covering teaching methods (including the use of television) and stressing the extent of the manpower need for instructors.

399. Godlewski, M. Kadry dla szkolnictwa zawodowego [Teaching staff for vocational schools]. *Głos nauczycielski* (Warszawa), vol. 51, no. 14, 1968, p. 6.

Discussion on the forthcoming reform of vocational schools must include the problem of training teaching staff for these schools. They can be roughly divided into three groups: teachers of theoretical vocational subjects, instructors for practical classes, and teachers of general subjects. The training of the third group does not really differ from that of teachers of the same subject in general high schools, whereas those belonging to the first two groups must of necessity follow quite a different programme. At the moment there are four main forms of training: secondary technical and pedagogical schools, teachers' colleges for graduates of vocational schools, universities and advanced technical schools providing also pedagogical courses, and pedagogical post-graduate courses.

400. Godlewski, M. Kształcenie i doksztalcanie nauczycieli [Training and further training of teachers]. *Szkola zawodowa* (Warszawa), nr. 10, październik 1970, p. 25-29., figs., illus.

Article suggesting the use of curriculum and training programme models designed for teacher training and the retraining of instructors and administrators engaged in the field of vocational training in Poland.

401. Hammar, J. En studie av yrkeskrav och arbetsuppgifter avseende yrkeslärare [A study of vocational demand and tasks concerning a vocational teacher]. Göteborgs universitet, Pedagogiska institutionen, 1970. 133 p.

402. International Labour Organisation. *Israel—Training of vocational instructors, supervisors and technicians*. Tel-Aviv, 1967. 115 p. figs., illus., bibl.

Report on vocational training and teacher training in Israel, with particular reference to the role of ILO in setting up, within the framework of the UN Development Programme, a training centre for further training of technicians, instructors and supervisors. The report covers manpower needs of the country, aspects of manpower planning, technical assistance, etc., and includes recommendations.

403. International Labour Organisation. *Vocational instructor and supervisor training, Nigeria*. Geneva, 1968. 63 p. figs., illus.

Project report and definition of the role of ILO in the UN Development Programme concerning the establishment of supervisory vocational training and teacher training for instructors in Nigeria. The subject matter dealt with includes the ILO programme concerning the training centres, training programmes, planning and financing the project, and the ILO Fellowship Programme.

404. International Labour Organisation. *Training of vocational teachers*. Rev. ed. (Geneva), International Vocational Training Information and Research Centre (CIRF), 1969. v.p. (CIRF monographs, no. 1)

This monograph, which is a revised edition of the 1964 publication under the same title, reports practices of the training of vocational teaching staff in twelve Western European countries. Particular emphasis is placed on the teaching of theoretical courses in vocational schools. Country profiles in the monograph cover the following aspects: background, development of vocational teacher training, status and functions of the vocational teacher, quantitative requirements, administration, aims and methods, courses, certificates, examinations, students, financial assistance for students, teaching staff and future development.

405. International Labour Organisation. *Formación profesional en Colombia; informe destinado al gobierno de Colombia* [Vocational training in Colombia; report to the Government of Colombia]. Ginebra, 1970. 127 p. figs., illus.

Report on the operations of two technical assistance projects concerning the development of vocational training and apprenticeship activities of the Servicio nacional de aprendizaje (SENA) and the creation of a national teacher training centre for instructors in Colombia. Review of the work of ILO missions and participation of the UN Development Programme, and recommendations relevant to administrative aspects, training programmes, trainee selection, training methods, equipment, etc.

406. Kowalczyk, W. Kształcenie pedagogiczne nauczycieli u wyższych uczelniach zawodowych [Teaching training organized in higher occupational education establishments]. *Ruch pedagogiczny* (Warszawa), vol. 13, no. 6, listop./grud. 1971.

Description of the training of vocational teachers in Poland. In general terms there are two ways of qualifying: (a) during the 4-semester course of technician training an optional extra course occupying a total of 215 hours may be taken, so that upon passing the final examinations both a technician's certificate in the relevant field and also a teaching qualification are obtained, the latter giving the right to practise as a vocational teacher of a trade in school or college; (b) subsequently to qualifying as an engineer, a similar course to that described above may be followed, totalling 235 hours, and success in this gives the right to teach.

407. Krjuckov, A.F. Podgotovka učitelja tehničkih disciplin i truda [Training teachers of technical subjects for pre-vocational classes]. *Sovetskaya pedagogika* (Moskva), vol. 33, no. 9, 1969, p. 93-98.

An article discussing current arrangements for training teachers for the pre-vocational classes in schools of general education, and suggestions for improvement.

408. Kunert, J. Szakképzési reform; személyi előfeltételek [Reform of vocational training—conditions regarding personnel]. *Szakképzésnevelés* (Budapest), évf. 19, szám 8-9, aug.-sept. 1968, p. 10-12.

Article on the need to improve occupational qualifications of vocational training teachers in Hungary and on the need, as a means thereto, to consult directors of training centres for teacher training in the setting up of training programmes.

409. Lauwerys, J.A. ed. *Teachers and teaching*. London, Evans Brothers, 1969. 147 p.
The status, training and economic and social situation of teachers in many regions of the world.
410. Littrell, J.J. *Guide to industrial arts teaching*. Peoria, Chas. A. Bennett, 1966. 192 p. illus., bibl.
Textbook on teacher training of vocational training teachers and instructors in the USA, covering teaching methods, job requirements in respect of teachers and instructors, the teaching process, teaching aids, safety education, etc.
411. Luetkemeyer, J.F. Some unresolved problems of industrial teacher education in light of recent vocational legislation. *Journal of industrial teacher education* (Lafayette), vol. 7, no. 5, Summer 1970, p. 19-24.
Article commenting on problems relating to teacher training programmes for vocational training instructors in the USA in the light of recent vocational legislation, covering administrative aspects, manpower needs, occupational qualifications, etc.
412. McMartin, A. The training of technical teachers. *Australian journal of education* (Melbourne), vol. 13, no. 3, October 1969, p. 286-295.
Summary of a longer unpublished report written after discussions held at the Sydney Teachers College by members of the staff engaged in technical teacher education. They were convinced of the need for a thorough re-examination of the aims and purposes of the existing courses if the technical teachers of the future were to meet effectively the challenges presented by the technological revolution. It is doubtful if any real improvement in technical teacher education is likely to be achieved by adapting or modifying existing courses. In New South Wales it is thirty years since the original scheme was inaugurated. A proposed course is outlined: principles and techniques of classroom competence; the social foundation of technical education; the personal development of the teacher; directed activities to supplement formal course work; and teaching experience. The minimum time to complete this course is the equivalent of one year's full-time study. The emphasis throughout is on producing high quality teachers capable of meeting the challenges implicit in this sphere of teaching.
413. Miller, W.R. Supervision of student teachers via Flanders analysis and video-tape: a pilot project. *Journal of industrial teacher education* (Lafayette, Ind.), vol. 5, no. 4, Summer 1968, p. 34-38.
Description of an experiment conducted to find ways of assessing more accurately and objectively of a student-teacher's performance in his practice teaching, hitherto subject to a mere subjective assessment of doubtful validity. Flanders' analysis endeavours to assess the spontaneous interaction between teacher and taught. There are seven marking categories in the system on 'teacher-talk', two on 'student-talk' and one for 'silence, pauses, and confusion'. These are systematically graded and the matrix of points analysed. Video-tape may be used to record the situation so that a second grading or a second opinion may be secured. The article concludes that, since industrial arts teaching is not solely 'talk', another such system is required more suitable for the assessment of laboratory teaching work.
414. Muellges, U. Lehrermangel und Lehrerausbildung—Probleme des Berufswechsels von Ingenieuren in das Gewerbelehreramt [Shortage of teachers and teacher training—problems of professional change of engineers into teachers for industry]. *Berufsbildende Schule* (Wolfenbüttel), Bd. 19, Nr. 4, April 1967, p. 240-249.
Article on the need for teachers and on teacher training, with particular reference to vocational training and technical education in the Federal Republic of Germany, envisaging the possibility of solving shortage problems by training technicians as teachers and facilitating their occupational change.

415. Muellges, U. Die Neuordnung der Ausbildung und Prüfung für das Lehramt an Berufsbildenden Schulen in Nordrhein-Westfalen [The reform of teacher training and examination for teachers in vocational schools in North Rhine-Westphalia]. *Berufsbildende Schule* (Wolfenbüttel), Bd. 22, Nr. 3, März 1970, p. 165-172.

Article commenting on new labour legislation concerning teacher training and examination requirements for teachers in vocational training in the North Rhine and Westphalia regions, with reference to curriculum, admission requirements, examination results in training centres, etc.

416. Nowacki, T. Wykształcenie pedagogiczne nauczycieli przedmiotów zawodowych [Teacher training for vocational subjects]. *Szkola zawodowa* (Warszawa), no. 9, 1968, p. 33-37.

Discussion of the classification of vocational teachers by categories, the criteria of classification and methods on which teacher training can be based.

417. Nusser, E. Die Ausbildung der Lehrer an beruflichen Schulen in Baden-Württemberg [The training of teachers for vocational schools in Baden-Württemberg]. *Deutsche Berufs- und Fachschule* (Wiesbaden), Bd. 64, Nr. 7, Juli 1968, p. 531-539.

Article on teacher training and further training of teachers in Baden-Württemberg, with particular reference to vocational training instructors in the Federal Republic of Germany.

418. O'Brian, J.L.; Schaefer, C.J. A review of research in trade and industrial teacher education. *Journal of industrial teacher education* (Lafayette), Winter 1967, p. 31-47., figs., bibl.

Review of research effected in respect of teacher training of vocational training instructors in the USA, covering recruitment, training programmes, trainee attitudes, occupational qualifications, etc.

419. Oproiu, D.; Cucu, E.; Dimitriu, G. Ridicarea nivelului de pregătire profesională a elevilor surzi prin organizarea unei legături eficiente între tehnologia meseriei și instruirea practică. *Buletin pedagogic* (București), vol. 11, no. 1, 1969, p. 64-72., bibl.

Article on the improvement of vocational training in Romania, with particular reference to teaching methodology and to the teaching programme.

420. Organisation for Economic Co-operation and Development. How Greece trains teachers for technical schools. *OECD Observer* (Paris), no. 16, June 1965, p. 12-15. figs. [Also published in French]

This article is concerned with the improvement of vocational and technical teacher training in Greece, assisted by the OECD. It deals particularly with new arrangements and improved programmes of the Vocational Teacher Education Institute of Athens (SELETE).

421. Organisation for Economic Co-operation and Development. *Study on Teachers*. Paris, 1968-1969.

Separate reports issued in 1968 and 1969 on the teacher position in each of the countries studied: supply and demand, legislation, training, productivity, salaries, etc., in Denmark, Italy, and Luxembourg (1968); Netherlands, Portugal (1968); Switzerland, Yugoslavia (1968); Austria, Greece, Sweden (1968); Germany, Belgium, United Kingdom (1969); France, Ireland (1969).

422. Ostrowski, C. Nauczyciel 'dochodzący' w szkole przykładowej [The part-time teacher in in-plant schools]. *Szkola zawodowa* (Warszawa), no. 2, 1971, p. 16-20.

This article considers the advantages and at the same time the weaknesses of the system whereby a good deal of instruction in the in-plant schools is given by industrial workers who, although holding qualifications as engineers or technicians, have not for the most part received any training in teaching. They cover such subjects as industrial drawing, study of materials, and business economics, giving between 6 and 12 hours per week to this work. It is proposed that in future they should give an undertaking to complete a basic pedagogical training course.

423. Pautler, A.J.; Buzzell, C.H. Blazing a new trail in the training of the T. and I. teacher. *School shop* (Ann Arbor, Mich.), vol. 28, no. 5, January 1969, p. 46-57.

Article on a scheme to train trade and industrial teachers by means of combined industrial experience and university studies in pedagogy. The scheme is open to leavers from secondary or technical schools and institutes. At the end of the course a student will have gained 5,000 hours of work experience, a university degree, a teaching certificate and an occupational competency qualification.

424. Pedagogiczne szkoły techniczne [Technical teacher training colleges]. *Szkola zawodowa* (Warszawa), no. 1, 1971, p. 32-36.

Description of a new type of school for instructor training: the conditions for admission, the syllabuses and system, together with suggestions for improvement. For those who are over 19 years of age, have completed a trade school and learnt their skilled trade, this type of institution gives the possibility of acquiring technician status and qualification and at the same time training as an instructor. The object is employment as a trade teacher either in a vocational school or in a technicum.

425. Pendse, S.G. Training for development. *Training for progress* (Geneva), vol. 8, no. 2-3, 1969, p. 34-41. figs., illus. [Also published in French]

Article on teacher training programmes for instructors and teachers engaged in vocational training activities in India. Subject-matter covered includes historical trends, training centres, curriculum, training methods, training programmes, etc.

426. Perlberg, A.; Hanani, H. *Preparation of teachers for vocational-technical schools in Israel*. Haifa, Technion Research and Development Foundation, 1968. 102 p. illus., bibl.

Report on teacher training of vocational training instructors in Israel, covering developmental trends, the general education system, administrative aspects, duration of training, the curriculum, the supply of and demand for teachers, recruitment procedures, job requirements, training programmes, etc., and including recommendations.

427. Peterson, A. The immediate problem. p. 109-114. MacLennan, A. The technical teachers. p. 98-108. In: *Education for industry*. Oxford, Longmans, 1968. 126 p.

A book derived from a symposium held at St. Hilda's College, Oxford, in October 1967 and in which the two papers are concerned with some of the immediate problems in industrial education, and with the supply and training of the necessary teaching staff.

428. Piperkov, S. Podgotovka na učiteli po tehničeskite predmeti [The training of teachers for technical subjects]. Scientific Institute 'T. Samodoumov'. *Narodna prosveta* (Sofia), no. 24, 1971, p. 226-294, bibl.

By observation and analysis of the work of the teachers, by enquiries from directors of schools, staff and pupils, and after reference to the training colleges and their staff, this

article evaluates the various forms and subjects of the training programmes. Advantages are thought to rest with the planned and integrated course embracing scientific, technical, pedagogic and practical training in one whole. The author gives thought to the type and place of such a training college and draws on the experiences of other countries.

429. Postic. *Introduction à la pédagogie des enseignements techniques*. Paris, Foucher, 1971. 79 p.

430. Professeurs spécialisés ou maître unique polyvalent? *Bulletin des chambres de métiers de France*, n° 13, janvier-février 1968, p. 22-24.

This article discusses the advantages or otherwise of having one class-teacher who gives all the related instruction to apprentices in craft subjects.

431. Razik, T.A. *Systems approach to teacher training and curriculum development; the case of developing countries*. Paris, International Institute for Educational Planning, 1972. 157 p. figs.

Description of a model devised for educational planning purposes in developing countries, based on a systems design approach to curriculum development and teaching training. Administrative aspects of training programme provision are also covered and a case study of the implementation of the model in the Sudan is included.

432. Rohringer, J. *Der österreichischer Berufsschullehrer* [The Austrian vocational school teacher]. Veröffentlichungen des Instituts für Pädagogik in Salzburg, 1970.

433. Schermeier, J. Ist die Berufsschullehrer Aus- und Fort-bildung verbesserungsfähig? [Can the vocational school teacher's basic or further training be improved?]. *Die Industrie* (Wien), Bd. 70, Nr. 130, Juli 1970, p. 10-12.

The article makes the point that at present the vocational teacher training college has to carry out both initial and further training as well as conduct research. This college (*berufspädagogische Institut*) could, it is suggested, be reorganized to provide longer courses, some of specialist nature.

434. Sedgwick, L.K.; Misfeldt, H.T. Micro-teaching—new tool for a new program. *Industrial arts and vocational education* (Milwaukee, Wisc.), vol. 56, no. 6, June 1967, p. 34-35.

Article on micro-teaching in teacher-training: description of method; evaluation of advantages. This is a procedure whereby the trainee-teacher gives 5-minute lessons to a group of about 5 secondary school students. By this method it is hoped to achieve optimum control and evaluation conditions, whilst affording the trainee-teachers a satisfactory amount of teaching practice before entry into employment professionally.

435. Silvius, G.H.; Curry, E.H. *Teaching successfully in industrial education*. 2nd ed. Bloomington, McKnight and McKnight, 1967. 645 p. figs., illus.

Teacher training textbook for use in connexion with vocational training for industry. It covers administrative aspects of teaching activities, teaching methods (including programmed instruction and audio-visual aids), safety education, aptitude tests, community relationships, etc., and questions on relevant subjects and bibliographies at end of each chapter.

436. Skakun, V. *Praktičeskie zanjatija po organizaciji i metodike proizvodstvennogo obučeniya* [Practical work, organization and methods in training for production]. *Professional'no—tehničeskoe obrazovanie* (Moskva), vol. 24, no. 11, 1967, p. 11-12.

Article concerning the training of young instructors for vocational schools and the kind of exercises introduced for that purpose.

437. Sommer, K.H. Die Gewerbelehrerbildung; eine Untersuchung über Studiengang und Kandidaten des Gewerbelehreramts an der Universität zu Köln [Vocational teacher training; an investigation into curriculum and candidates for vocational teacher training at the University of Cologne]. *Berufserziehung im Handwerk. Untersuchungen* (Köln), 1969, p. 111-165. figs., bibl. Universität, Köln, Institut für Berufserziehung im Handwerk.

Investigation of the organization of teacher training for vocational training teachers and instructors at the University of Cologne, covering the educational level, professional experience and social status of trainee teachers, curriculum planning, the percentage of examination passes, etc., and forecasting future developments.

438. Stern, B.J. Trade teachers: recruitment and training. *Industrial arts and vocational education* (Milwaukee), vol. 56, no. 6, June 1967, p. 44-45.

This article considers that the Vocational Education Act 1963 has created a new status for vocational education in the United States, calls for a reappraisal of the trade experience and educational requirements demanded of the trade teacher.

439. Sweden. Yrkesutbildningsberedningen. *Reformerad Lärarutbildning* [Reforms in teacher training]. Stockholm, 1970. 303 p., figs. (Sweden. Statens offentliga utredningar 1970, no. 4)

Report on the teacher training programme in Sweden, with particular reference to the reform of teaching methods in vocational training and technical education. It includes a comparative study of relevant practice in Europe and the USA, and a forecast of costs.

440. Swedish International Development Authority. *Vocational education and vocational teacher training in Pakistan: report from a mission to Pakistan, October-December 1970*. Stockholm, 1971, figs.

Technical assistance report of a mission on the role of Sweden in the provision of vocational training and teacher training in Pakistan, outlining the work of the mission and covering apprenticeship training programmes, training centres, technical education, technological institutes, higher education, commercial education for women, manpower needs, educational needs, employment, etc., and discussing problems relating to educational planning.

441. Szentirmai, L. A műszaki oktató—/technikustanár/ képzés a korszerű gyakorlati oktatás alapfeltétele [The training of the technical teacher: first condition for modern vocational education]. *Középfokú Szakokt* (Budapest), 3. évf. 1970, 5. sz., p. 17-20.

442. Tolonen, P. The emerging image. *American vocational journal* (Washington, D.C.), vol. 41, no. 9, December 1966, p. 30-32.

This article notes the increasing number of craftsmen and others who, observing the growing status of vocational education, are consequently attracted to becoming instructors.

443. Unesco. *Formation de moniteurs de l'enseignement technique et professionnel, Vientiane, Royaume du Laos*. Paris, 1968. 30 p., figs.

Report on the creation of a training centre providing teacher training for vocational training instructors in Laos, under the UN Development Programme. It covers educational needs, training provided, students, equipment, financing, etc.

444. Unesco. Staff position paper on vocational and technical teacher training. Paris, 1971. 48 p., annexes., bibl. [mimeographed]

This paper is a part of an extensive international study on technical and vocational teacher education and training undertaken by Unesco and ILO (see entry no. 450).

The purposes of this position paper are: to contribute to a certain standardization in the field of technical teacher education; to create a common policy at national and international levels, particularly regarding Unesco; to provide guidance for experts going on missions to prepare and plan projects in this field. The paper deals only with problems related to technical and vocational teacher education within the framework of the education system. It covers the relevant terminology, training patterns and programmes; and organization of training at national and institutional levels. Particular attention is paid to problems and recommendations on technical teacher education in developing countries in this field.

445. Unesco. Technical and vocational teacher education and training; a study prepared by the Section of Technical Education and Technical Teacher Training, EDS, Unesco and International Labour Organisation. Paris, 1971. 268 p. figs., bibl., annexes. [mimeographed]

Examination of vocational and technical teacher education in both industrialized and developing countries—34 countries in all. In the introductory chapter, five categories of vocational and technical teachers are defined: vocational teachers, technical teachers, vocational or workshop instructors, training officers and technical orientation teachers. The study deals primarily with two major areas in vocational and technical teacher education: the organization of the programmes and their content. Within these two areas a wide variety of programmes, institutions and curricula have been examined. One of the chapters deals also with some aspects of planning for quality in vocational and technical teaching. In conclusion, some of the general trends have been discussed, followed by several recommendations germane to the problems facing developing countries.

446. United Kingdom. Central Training Council. *The selection and training of instructors*. London, 1966. 7 p.

A statement by the Central Training Council of the United Kingdom on recruitment and training of vocational training instructors.

447. United Kingdom. Department of Education and Science. *Teacher education and training*. Report of a Committee of Enquiry appointed by the Secretary of State for Education and Science. (The James Report). London, HMSO, 1972. 128 p.

The report is concerned with the content, organization, and location of courses to be provided for intending teachers. Three cycles of education and training are intended: personal education of the future teacher; pre-service training and induction; in-service education and training. Of the six chapters, three deal separately with the three cycles mentioned, whilst Chapter 6 has some clauses dealing specially with teachers for further education work.

448. United Kingdom. Technical Education Resource Group. *Council for Technical Education and Training for Overseas Countries*. London, 1972, 19 p.

This booklet is of value for all those who, as administrators, planners or teachers have to face the problems of organizing effective and economic technical education and vocational training in the developing countries. It is concerned primarily with the training of such personnel and their continued development.

449. University of Michigan, Department of Education. *Experimental program for identification selection and development of persons for leadership roles in the administration and supervision of vocational and technical education*. Ann Arbor, University of Michigan, 1966. 82 p.

Report on a programme of preparation for administrators for the field of technical education and training, designed to meet the increasing demand for personnel to fill leadership roles. Selection criteria are discussed, suggestions include an eight-week 'workshop' and a one-year 'internship', while the conclusions include thoughts for future action.

450. Váradi, T. Képzéstechnológia és neveléstudomány [Technology of instruction and pedagogical theory]. *Középfoku Szakokt.* (Budapest), 3. évf. 5. sz. 1-9, 6. sz., 1970, p. 1-3.

451. Venezuela. Laws, statutes, etc. Reglamento para el mejoramiento profesional del magisterio de educación normal, secundaria y técnica [Regulation for further training of the teaching staff of training colleges, and secondary and technical schools]. *Gaceta Oficial de la República de Venezuela* [Caracas], vol. 95, no. 28.309, 18 abril 1967, p. 210.972—210.975.

At the Institute for the further training of teachers it is proposed to: qualify teachers who do not at present hold a certificate; train qualified teachers for positions as heads; train specialists for the development of the education system; and facilitate pedagogical research. Regional branches of the Institute may be set up.

452. Westh, B. Training for change. *Training for progress* (Geneva), vol. 8, no. 2-3, 1969, p. 42-48. figs. [Also published in French]

Article on teacher training programmes for instructors and teachers engaged in vocational training activities in Denmark. It covers the apprenticeship system, training centres, recruitment, curriculum, training methods, etc.

453. Wick, S.K. Project 364—Television to recruit and train vocational educators. *Vocatio* (S.Paul, Minn.), vol. 1, no. 3, November 1967, p. 34-37.

This article describes a scheme actually put into practice whereby TV was used both in the recruitment of personnel for vocational teaching and in their training for that occupation. Some 80 applicants were given 12 sessions each of 2 hours, 30 minutes of occupation. Some 80 applicants were given 12 sessions each of 2 hours, 30 minutes of occupation. Some 80 applicants were given 12 sessions each of 2 hours, 30 minutes of occupation. Some 80 applicants were given 12 sessions each of 2 hours, 30 minutes of occupation. The author believes the method may be useful for application in isolated communities.

454. Zak, V. Golovit' bol'se inzenеров—pedagogy [The need for training more engineers for teaching]. *Professional'no—tehničeskoe obrazovanie* (Moskva), vol. 23, no. 6, 1966, p. 3-4.

This article describes courses at the Byelorussian Polytechnical Institute, which provide a supplementary course of pedagogical method simultaneously with the course of training as engineers, so that the successful trainees may later take posts at vocational and technical schools.

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